User Manual

Unicorn 3001

Analog Telephone Adaptor

Hanlong Technology Co., Ltd

http://www.hanlongtek.com

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1 WELCOME

Unicorn 3001 is an all-in-one VoIP integrated access device that features superb audio

quality, rich functionalities, high level of integration, compactness and ultra-affordability. The Unicorn 3001 is fully compatible with SIP industry standard and can interoperate with many other SIP compliant devices and software on the market.

- Special compatibility features include:
- Nortel MCS
- Standard SIP
- Broadsoft
- Howdy

2 WHAT IS IN THE PACKAGE

The Unicorn 3001 package contains:

- One Unicorn 3001 VoIP adapter
- One universal power supply
- One Ethernet cable

3 PRODUCT OVERVIEW

3.1 Key Features

- Supports SIP 2.0(RFC 3261), TCP/UDP/IP, RTP/RTCP, HTTP, ICMP, ARP/RARP, DNS, DHCP (both client and server), NTP, PPPoE, STUN, TFTP, etc.
- Supports call origination and termination from/to the PSTN network
- Powerful digital signal processing (DSP) to ensure superb audio quality; advanced adaptive jitter control and packet loss concealment technology
- Support various vocoders including G.711 (a-law and u-law), G.723.1 (5.3K/6.3K,optional), G.726 (40K/32K/24K/16K,optional), as well as G.729A/B.
- Support Caller ID/Name display or block, Hold, Call Waiting/Flash, Call Transfer, Call Forward, in-band and out-of-band DTMF, Dial Plans, etc.
- Support fax pass through and T.38.
- Support Silence Suppression, VAD (Voice Activity Detection), CNG (Comfort Noise
- Generation), Line Echo Cancellation (G.168), and AGC (Automatic Gain Control)
- Support standard encryption and authentication (DIGEST using MD5 and MD5-sess)

- Support for Layer 2 (802.1Q VLAN, 802.1p) and Layer 3 QoS (ToS, DiffServ, MPLS)
- Support automated NAT traversal without manual manipulation of firewall/NAT ,and STUN, UPNP.
- Support device configuration via built-in IVR, Web browser or central configuration file through TFTP or HTTP
- Support firmware upgrade via TFTP or HTTP with encrypted configuration files.
- Support volume amplification
- Support configurable Call Progress Tones
- Ultra compact (wallet size) and lightweight design, great companion for travelers
- Compact, lightweight Universal Power adapter.

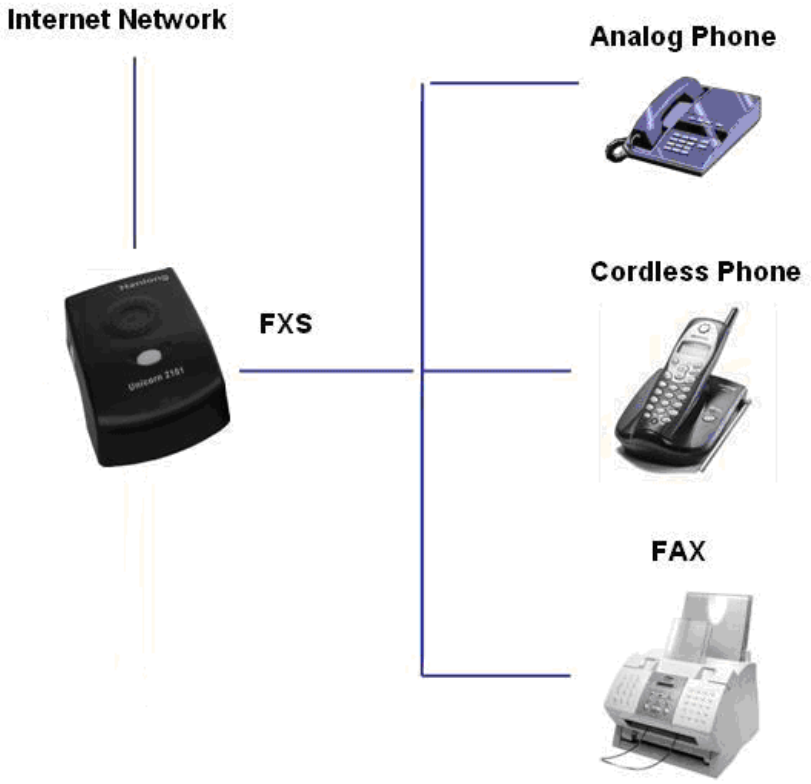
3.2 Hardware specification

Model	Unicorn 3001
WAN interface	1 x RJ45 100MBase-T
FXS telephone port	1 x FXS
LED light	Green and red color
Universal switching power supply	Input: 100-240VAC 50-60 Hz Output: +9VDC, 600mA, CE certification
Dimension	70mm (W) ×130mm (D)×27mm (H)
Weight	0.35kg
Temperature	40 – 130 F 5 – 45 C
Humidity	10 - 90%

4 INSTALLATIONS

The Unicorn 3001 is an all-in-one VoIP integrated device designed to be a total solution for networks providing VoIP services. The Unicorn 3001 VoIP features are available when you connect any regular analog telephone to it.

Unicorn 3001 has one FXS port (labeled “Phone”). The following photo illustrates the Interconnection Diagram of the of a Unicorn 3001:



Following are the steps to install a Unicorn 3001:

- Connect a standard touch-tone analog telephone to the “Phone” port.
- Insert Ethernet cable into the WAN port of Unicorn 3001 and connect the other end of the Ethernet cable to an uplink port (a router, switch, hub, modem, etc)
- Insert the powers supply (included with package) into the Unicorn 3001 and connect it to a power outlet.

4.1 Safety

The Unicorn 3001 is compliant with various safety standards including FCC/CE and C-Tick. Its power adaptor is compliant with UL standard. The Unicorn 3001 should only operate with the universal power adaptor provided in the package.

Warning: Please do not use a different power adapter. Using other power adapter may damage the Unicorn 3001 and will void the manufacturer warranty!

Caution: Changes or modifications to this product not expressly approved by Hanlong Technology, or operation of this product in any way other than as detailed by this User Manual, could void your manufacturer warranty.

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5 BASIC OPERATIONS

5.1 Get Familiar with Voice

Unicorn 3001 has stored a voice prompt menu for quick access to settings and simple configuration. You can enter this voice prompt menu one ways

➢Pick up the receiver (or press the Handsfree button) of the analog telephone and press "***"

A voice will say, "Enter the new option." At this point, you can select from the following menu voice prompt options to begin using the Unicorn 3001:

Menu	Voice Will Say the Following:	
Main Menu	"Enter a Menu Option"	Enter "*" for the next menu option Enter "#" to return to the main menu Enter 01 – 07,12 - 17, 47, 86 or 99 Menu option
01	"DHCP Mode", "Static IP Mode"	Enter '9' to toggle the selection If user selects "Static IP Mode", user need configure all the IP address information through menu 02 to 05. If user selects "Dynamic IP Mode", the device will retrieve all IP address information from DHCP server automatically when user reboots the device.
02	"IP Address " + IP address	The current WAN IP address is announced Enter 12-digit new IP address if in Static IP Mode.
03	"Subnet " + IP address	Same as Menu option 02
04	"Gateway " + IP address	Same as Menu option 02
05	"DNS Server " + IP address	Same as Menu option 02
06	"MAC Address"	Announces the Mac address of the unit.
07	Preferred Vocoder	Enter "9" to go to the next selection in the list: ➢ PCM U ➢ PCM A ➢ G-726 ➢ G-723 ➢ G-729

12	WAN Port Web Access	Enter “9” to toggle between enable and disable
13	Firmware Server IP Address	Announces current Firmware Server IP address. Enter 12 digit new IP address.
14	Configuration Server IP Address	Announces current Config Server Path IP address. Enter 12 digit new IP address.
15	Upgrade Protocol	Upgrade protocol for firmware and configuration update. Enter “9” to toggle between TFTP and HTTP
16	Firmware Version	Firmware version information.
17	Firmware Upgrade	Firmware upgrade mode. Enter “9” to rotate among the following three options: 1. always check 2. check when pre/suffix changes 3. never upgrade
47	“Direct IP Calling”	Enter the target IP address to make a direct IP call, after dial tone. (See “Make a Direct IP Call”.)
99	“RESET”	Enter “9” to reboot the device; or Enter MAC address to restore factory default setting (See Restore Factory Default Setting section)
	“Invalid Entry”	Automatically returns to Main Menu

Other Menu Prompt Features:

- Just like pressing “***” on the analog telephone, you will hear “Direct IP Calling”, which is just like selecting option 47 from the table above.
- “*” shifts down to the next menu option
- “#” returns to the main menu
- “9” functions as the ENTER key in many cases to confirm an option
- All entered digit sequences have known lengths - 2 digits for menu option and 12 digits for IP address. Once all of the digits are collected, the input will be processed.
- Incorrect keyed entry cannot be deleted or undone. The Unicorn 3001 will prompt you to start over by telling you that you made an error.

5.2 Make Phone call

5.2.1 Calling Phone or Extension Numbers

- Dial the number directly and wait for 4 seconds (Default is 4 seconds. To change the

default, change the settings via the web configuration page under “No Key Entry Timeout”). Or

- Dial the number directly, and press # (assuming that “Use # as Dial Key” is set to “YES” during web configuration of your Unicorn 3001).

Other functions available during the call are call-waiting/flash, call-transfer, and call-forward. Your SIP gatekeeper/proxy server needs to support these features in order for them to work.

5.2.2 Direct IP-to-IP Calls

Direct IP calling allows two parties, that is, a FXS Port with an analog phone and another VoIP Device, to talk to each other in an ad hoc fashion without a SIP proxy.

Elements necessary to completing a Direct IP Call:

1. Both Unicorn2101 and other VoIP Device, have public IP addresses, or
2. Both Unicorn2101 and other VoIP Device are on the same LAN using private IP addresses, or
3. Both Unicorn2101 and other VoIP Device can be connected through a router using public or private IP addresses (with necessary port forwarding or DMZ).

Unicorn2101 supports two ways to make Direct IP Calling:

Using IVR

1. Pick up the analog phone then access the voice menu prompt by dial “***”
2. Dial “47” to access the direct IP call menu
3. Enter the IP address using format ex. 192*168*0*160 after the dial tone.

Using Star Code

1. Pick up the analog phone then dial “*47”
2. Enter the target IP address using same format as above.

Note: NO dial tone will be played between step 1 and 2.

Destination ports can be specified by using “*” (encoding for “:”) followed by the port number.

Examples:

a) If the target IP address is 192.168.0.160, the dialing convention is ***47 or Voice Prompt with option 47, then 192*168*0*160.** followed by pressing the “#” key if it is configured as a send key or wait 4 seconds. In this case,the default destination port 5060 is used if no port is specified.

b) If the target IP address/port is 192.168.1.20:5062, then the dialing convention would be: ***47 or Voice Prompt with option 47, then 192*168*0*160*5062** followed by pressing the “#” key, if it is configured as a send key or wait for 4 seconds.

NOTE: When completing direct IP call, the “**Use Random Port**” should set to “NO”.

5.2.3 Blind Transfer

Assuming that call party A and party B are talking to each other on the phone. Party A wants to transfer party B to party C:

- Party A presses FLASH (on the analog phone, or Hook Flash for old model phones) to get a dial tone.
- Then party A dials *87 then dials party C's number, and then # (or wait for 4 seconds) Party A can hangs up the phone.
- Note: Call features have to be activated during web configuration by selecting YES to "Enable Call Features". These features need to be supported by your SIP gatekeeper/proxy server in order to work.
- Party A can hold on to the phone and wait for one of the three following events:

1. A quick confirmation tone (temporarily using the call waiting indication tone) followed by a dial tone.This indicates the transfer is successful (transferee has received a 200 OK signal from transfer target). At this point, party A can either hang up or make another call.
2. A quick busy tone followed by a restored call (on supported SIP gatekeeper platforms only). This means the transferee has received a 4xx response signal for the INVITE and will try to recover the call. The busy tone is just to indicate to the transferor that the transfer has failed.
3. Busy tone keeps playing. This means the Unicorn 3001 has failed to receive the second NOTIFY signal from the transferee and decided to time out.

Note: this does not indicate the transfer has been successful, nor does it indicate the transfer has failed. When transferee uses a device that does not support the second NOTIFY signal, this will be the case. In poor or unstable network scenarios, this could also happen, although the transfer may have been completed successfully.

5.2.4 Attended Transfer

Assuming that call party A and party B are in conversation. Party A wants to Attend Transfer party B to party C:

- Party A presses FLASH (on the analog phone, or Hook Flash for old model phones) to get a dial tone.
- Party A then dials party C's number then # (or wait for 4 seconds). Party A and party C now are in conversation.
- Party A can hang

Note: When Attended Transfer failed and if party A hangs up, the Unicorn 3001 will ring party A again to remind party A that party B is still on the call, by pressing FLASH or Hook again will restore the conversation between party A and party B.

5.3 Call Features

5.3.1 Call Features Tables

Following table shows the call features of Unicorn 3001:

Key	Call Features
***30**	Block Caller ID (for all subsequent calls)
***31**	Send Caller ID (for all subsequent calls)
***67**	Block Caller ID (per call)
***82**	Send Caller ID (per call)
***50**	Disable Call Waiting (for all subsequent calls)
***51**	Enable Call Waiting (for all subsequent calls)
***70**	Disable Call Waiting. (Per Call)
***71**	Enable Call Waiting (Per Call)
***72**	Unconditional Call Forward. To use this feature, dial "*72" and get the dial tone. Then dial the forward number and "#" for a dial tone, then hang up.
***73**	Cancel Unconditional Call Forward. To cancel "Unconditional Call Forward", dial "*73" and get the dial tone, then hang up.
***90**	Busy Call Forward. To use this feature, dial "*90" and get the dial tone. Then dial the forward number and "#" for a dial tone, then hang up.
***91**	Cancel Busy Call Forward. To cancel "Busy Call Forward", dial "*91" and get the dial tone, then hang up.
***92**	Delayed Call Forward. To use this feature, dial "*92" and get the dial tone. Dial the forward number and "#" for a dial tone and then hang up.
***93**	Cancel Delayed Call Forward. To cancel this feature, dial "*93", get the dial tone, and then hang up.
Flash/Hook	call waiting indication. When in conversation without an incoming call, this action will switch to a new channel to make a new call.

5.4 Status Light Indicator

Following tables show the Unicorn 3001 button light pattern indication.

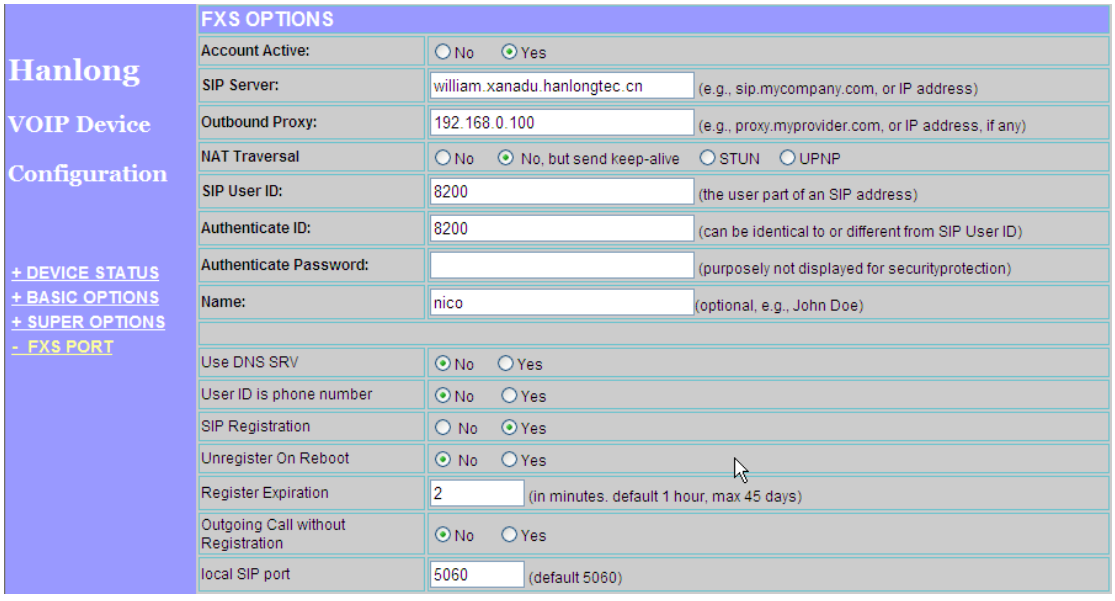
LED	
Power	Indicates Power. Remains ON when power is connected

Run	1second ON then 1second OFF Indicates device software is running. Fast blinking indicate the product in firmware upgrading or provision state.
Phone	Indicate status of the FXS Port on the back panel: Busy – ON (Solid Green) Available – OFF Fast blinking – Ringing Slow blinking FXS LEDs indicates voicemail for that port.
Line	Indicate status of the Line Port on the back panel Busy – ON (Solid Green) Available – OFF Fast blinking – Ringing

6 CONFIGURATION GUIDE

6.1 Configuring Unicorn 3001 using Web Browser

Unicorn 3001 has embedded Web server and HTML pages that allow users to configure the Unicorn 3001 through an easy-to-use Web browser interface such as Microsoft's Internet Explorer or Netscape browser. Below is a screen shot of the Unicorn 3001 configuration page:



6.1.1 Accessing the Web Configuration

The Unicorn 3001 configuration page can be accessed via the WAN port.

http://Unicorn 3001's IP Address

Be sure that your PC is connected to the router/hub/switch directly.

6.1.2 User Programming and Configuration

From your web browser, the Unicorn 3001 will show the following login screen:

Enter the password and click on the "Login" button

6.1.3 Passwords

Passwords are case sensitive and all Unicorn devices come with factory default passwords as indicated below:

Advanced User Password for access to Super User Options: **admin**

End User Password for access to Basic User Options: **1234**

6.1.4 Configuration Options and Explanations

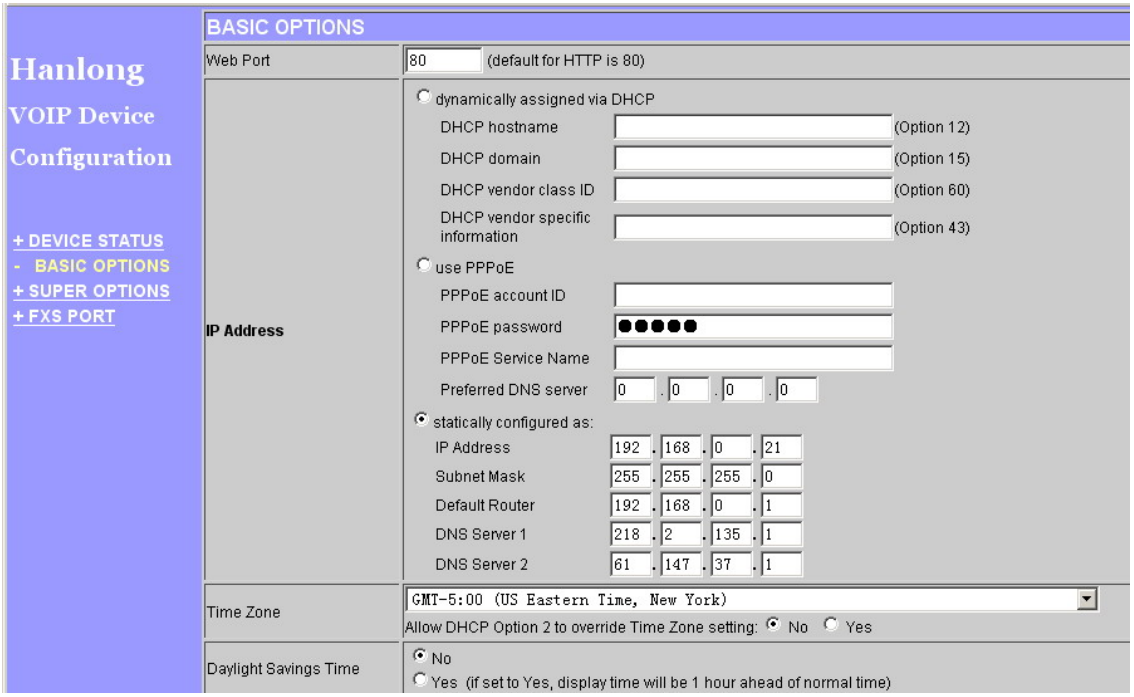
After a correct password is entered in the login screen, the embedded web server inside the Unicorn 3001 will show the configuration page, which is explained in details below:

6.1.4.1 Device Status

DEVICE STATUS	
Setting Options	Meaning
MAC Address	The device ID, in HEX format. This is a very important ID for ISP troubleshooting.
WAN IP Address	There are 2 modes under which the Unicorn 3001 can operate: - If DHCP mode is enabled, then all the field values for the Static IP mode are not used (even though they are still saved in the chipset's memory). The Unicorn 3001 will acquire its IP address from the first DHCP server it discovers from the office/home network it is connected to. To use the PPPoE feature, the PPPoE account settings need to be set. The Unicorn 3001 will attempt to establish a PPPoE session if any

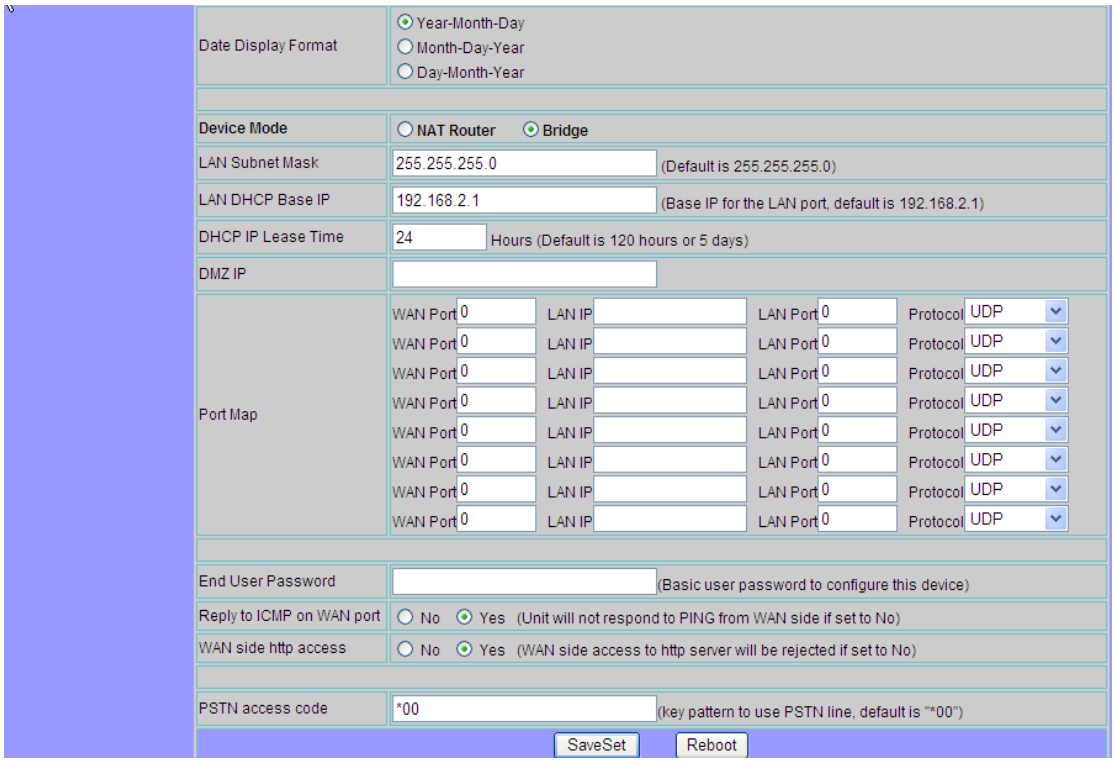
	of the PPPoE fields have been entered with data. - If Static IP mode is enabled, then the IP address, Subnet Mask, Default Router IP address, DNS Server 1 (primary), DNS Server 2 (secondary) fields will need to be configured by the user. These fields are reset to zero by default.
Product Model	This product model is Unicorn 3001
Software Version	Information of software
System Uptime	Show system uptime since last reboot
PPPoE Link Up	Indicates where the PPPoE connection is up if the Uicorn3001 is connected to the DSL modem.

Basic Options Settings



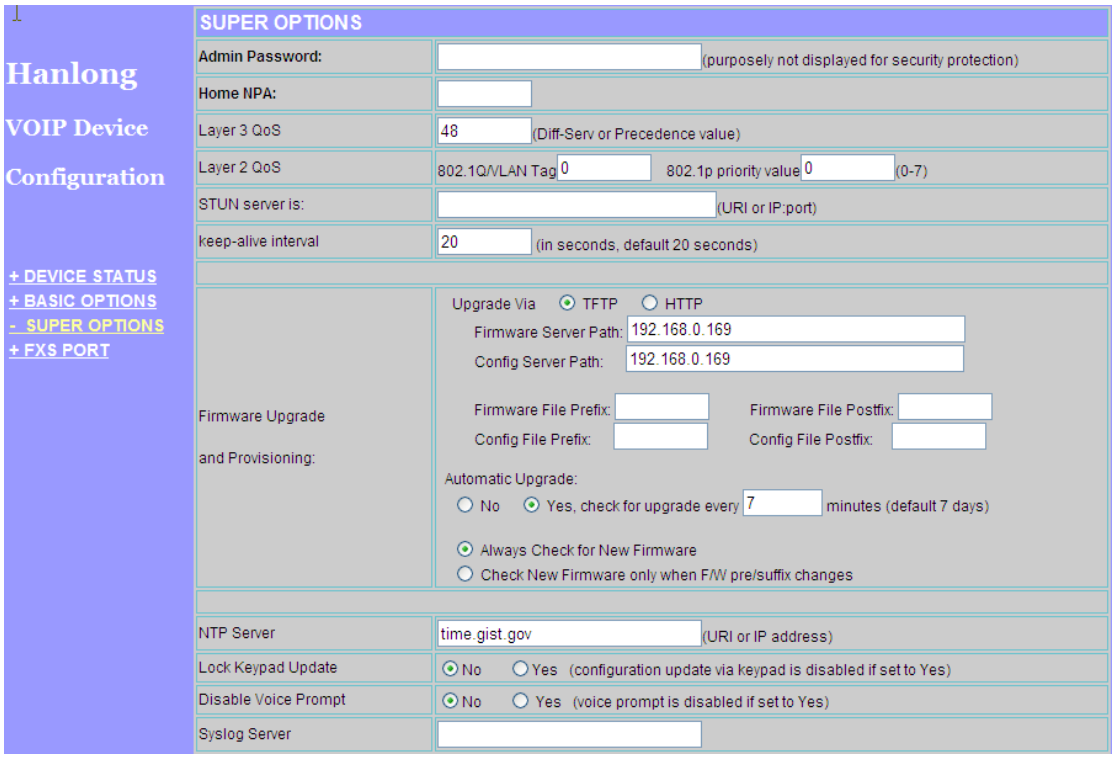
BASIC OPTIONS Setting	
Setting options	meaning
Web Port	The default is 80.
IP Address	all the field values for the Static IP mode are not used (even though they are still saved in the Flash memory.) set the PPPoE account settings. The Unicorn 3001 will establish a PPPoE session if any of the PPPoE fields is set. configure the IP address, Subnet Mask, Default Router IP address, DNS Server 1 (primary), DNS Server 2 (secondary) fields. These fields are set to zero by default.

Time Zone	This parameter controls how the displayed date/time will be adjusted according to the specified time zone.
Daylight Savings Time	This parameter controls whether the displayed time will be daylight savings time or not. If set to Yes, then the displayed time will be 1 hour ahead of normal time.



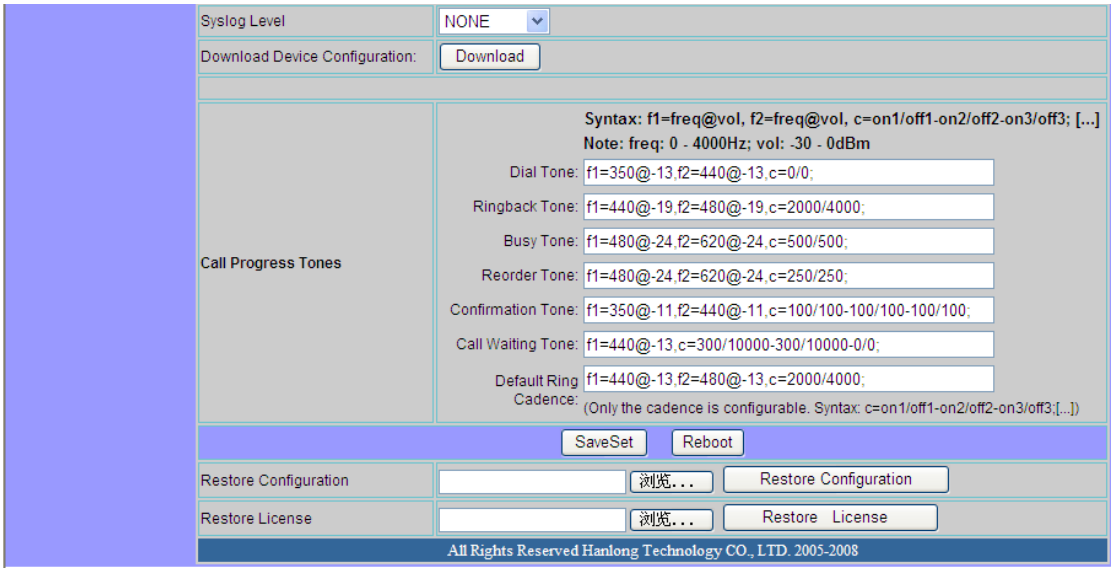
BASIC OPTIONS SETTINGS	
Setting Options	Meaning
Date Display Format	Allow user to choose among the following three formats: Year-Month-Day Month-Day-Year Day-Month-Year
End User Password	This contains the password to access the Web Configuration Menu. This field is case sensitive.

Super Options Setting



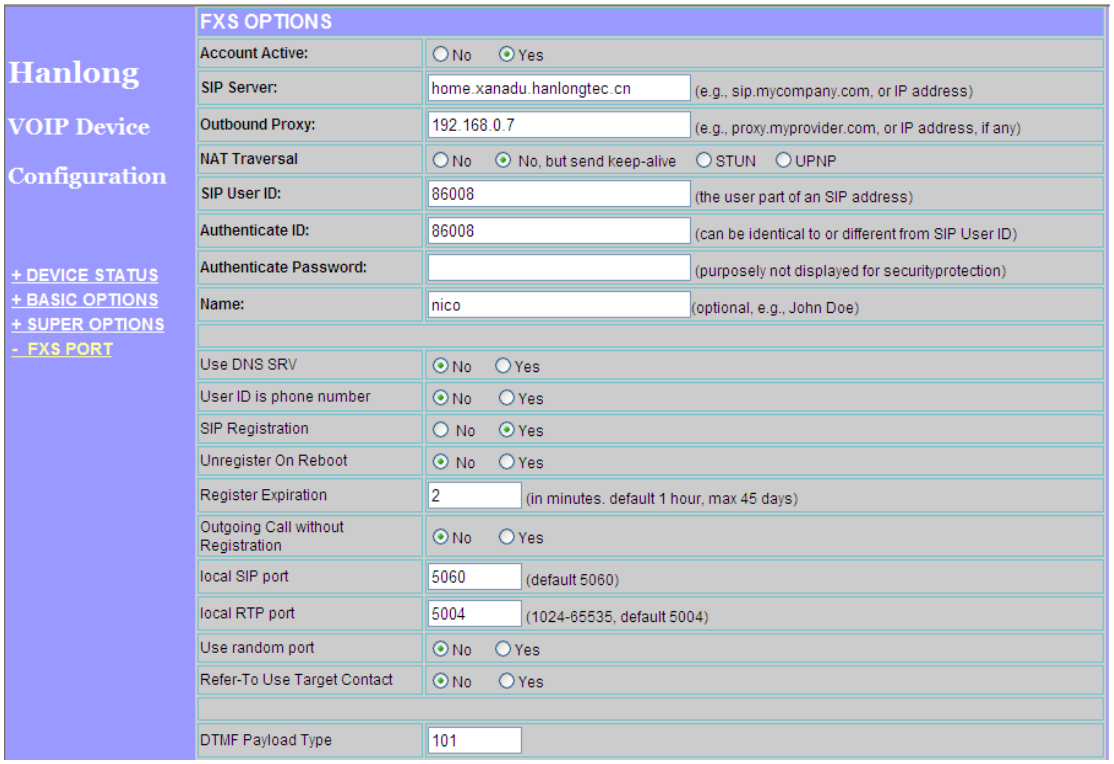
SUPER OPTIONS	
Setting options	Meaning
Admin Password	This contains the password to access the Advanced Web Configuration page. This field is case sensitive. Only the administrator can configure the “Advanced Settings” page. Password field is purposely left blank for security reasons after clicking update and saved. The maximum password length is 26 characters,only digit or letter.
Layer 3 QoS	This field defines the layer 3 QoS parameter which can be the value used for IP Precedence or Diff-Serv or MPLS. Default value is **48**.
Layer 2 QoS	This contains the value used for layer 2 VLAN tag. Default setting is **blank.**
STUN server	IP address or domain name of stun server.
keep-alive interval	This parameter specifies how often the Unicorn 3001 sends a blank UDP packet to the SIP server in order to keep the “hole” on the NAT open.
Firmware Upgrade and Provisioning	Upgrade though **TFTP** or **FTTP** server.
NTP Server	This parameter defines the URI or IP address of the NTP server which is used by the Unicorn 3001 to display the current date/time.
Lock Keypad Update	If this parameter is set to **Yes**, the configuration

	update .via. keypad is disabled.
Disable Voice Prompt	Default is **NO**.
Syslog Server	Default is **blank**, the feature is useful for the Internet Telephone Service Provider.



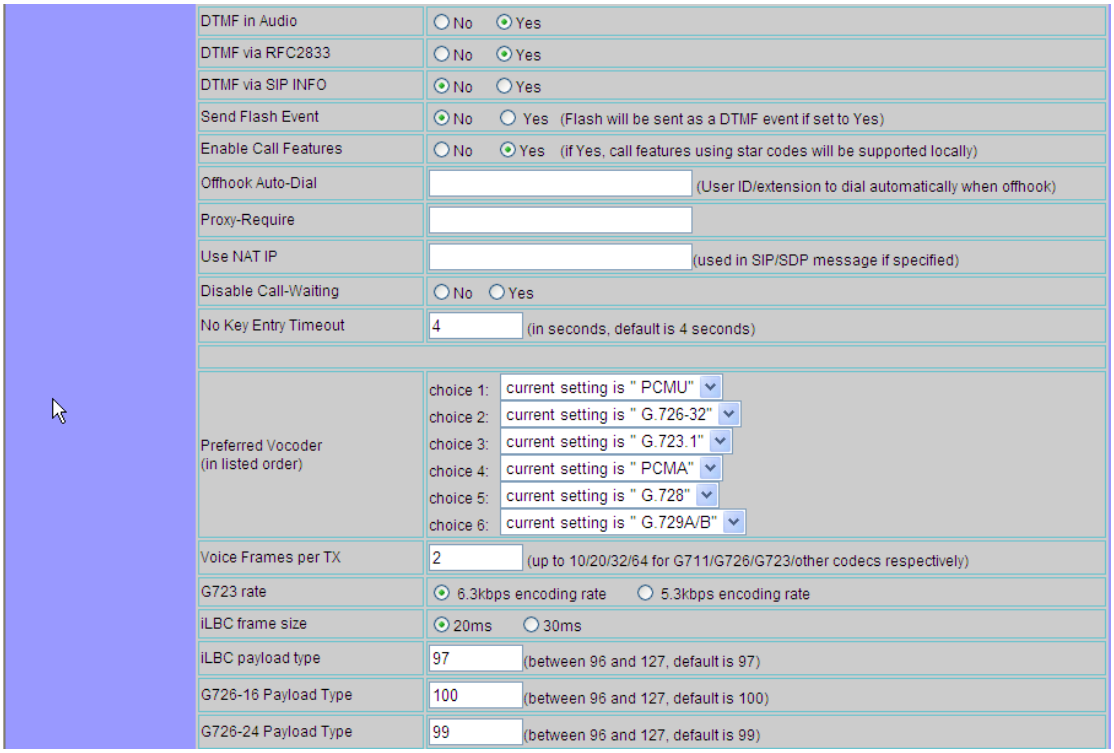
SUPER OPTIONS	
Setting options	Meaning
Syslog Level	Default is blank, the feature is useful for the Internet Telephone Service Provider.
Download Device Configuration:	User can download configuration from the web page and save to configuration file.
Call Progress Tones	Using these settings, users can configure tone frequencies and cadence according to their preference. By default they are set to North American frequencies. Configure these settings with known values to avoid uncomfortable high pitch sounds. ON is the period of ringing ("On time" in 'ms') while OFF is the period of silence. In order to set a continuous tone, OFF should be zero. Otherwise it will ring ON ms and a pause of OFF ms and then repeat the pattern. Example configuration for N.A. Dialtone: f1=350@-13,f2=440@-13,c=0/0; Syntax: f1=freq@vol, f2=freq@vol, c=on1/off1-on2/off2-on3/off3; [...] (Note: freq: 0 - 4000Hz; vol: -30 - 0dBm)
Restore Configuration	User can restore the before configuration from the configuration file saved at local pc

FXS Port



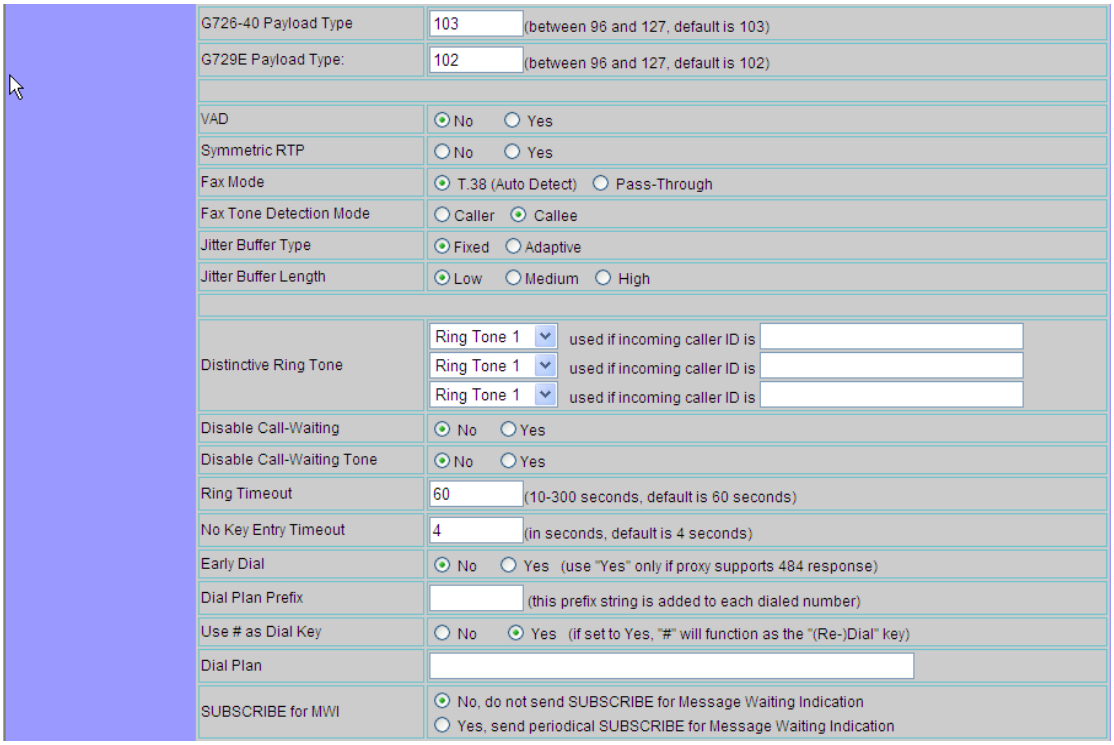
FXS PORT	
Setting options	Meaning
Account Active:	Set to the **YES**, the account can be available
SIP Server	SIP Server's URI or IP address
Outbound Proxy	SIP Outbound Proxy Server's URI or IP address
SIP User ID	SIP service subscriber's User ID
Authenticate ID	SIP service subscriber's Authenticate ID. Can be identical to or different from SIP User ID
Authenticate Password	SIP service subscriber's account password
Name	SIP service subscriber's name which will be used for Caller ID display
Use DNS SRV	Default is **No**. If set to Yes the client will use DNS SRV for server lookup
User ID is phone number	If the Unicorn 3001 has an assigned PSTN telephone number, this field should be set to "Yes". Otherwise, set it to **No**. If **Yes** is set, a "user=phone" parameter will be attached to the "From" header in SIP request
SIP Registration	This parameter controls whether the Unicorn 3001 needs to send REGISTER messages to the proxy server. The default setting is **Yes**.
Unregister On Reboot	Default is **No**. If set to **Yes**, the SIP user will be unregistered on reboot.

Register Expiration	This parameter allows the user to specify the time frequency (in minutes) the Unicorn 3001refreshes its registration with the specified registrar. The default interval is **6** minutes, The maximum interval is **65535** minutes (about 45 days).
Outgoing Call without Registration	Default is No. If set to “Yes,” user can place outgoing calls even when not registered (if allowed by ITSP) but is unable to receive incoming calls.
Local SIP port	This parameter defines the local SIP port the Unicorn 3001 will listen and transmit. The default value for FXS port is **5060**.
Local RTP port	This parameter defines the local RTP-RTCP port pair the Unicorn 3001 will listen and transmit. It is the base RTP port for channel 0. When configured, channel 0 will use this port _value for RTP and the port_value+1 for its RTCP; channel 1 will use port_value+2 for RTP and port_value+3 for its RTCP. The default value for FXS port is 5004.
Use random port	This parameter, when set to **YES**, will force random generation of both the local SIP and RTP ports. This is usually necessary when multiple Unicorn 3001 are behind the same NAT.
Refer-To Use Target Contact	Default is **NO**. If set to **YES**, then for Attended Transfer, the “Refer-To” header uses the transferred target’s Contact header information.
DTMF Payload Type	Sets the payload type for DTMF using RFC2833



FXS PORT	
Setting options	Meaning
DTMF in Audio	Default is **YES**.
DTMF via RFC2833	Default **YES**.
DTMF via SIP INFO	Default is **NO**.
Send Flash Event	This parameter allows users to control whether to send an SIP NOTIFY message indicating the Flash event, or just to switch to the voice channel when users press the Flash key.
Enable Call Features	Default is **No**. If set to **Yes**, Call Forwarding & Do-Not-Disturb are supported locally
Offhook Auto-Dial	This parameter allows users to configure a User ID or extension number to be automatically dialed upon offhook. Please note that only the user part of a SIP address needs to be entered here. The Unicorn 3001 will automatically append the "@" and the host portion of the corresponding SIP address.
Proxy-Require	SIP Extension to notify SIP server that the unit is behind the NAT/Firewall.
Disable Call Waiting	Default is **NO**.
No Key Entry Timeout	Default is **4** seconds.
Preferred Vocoder	The Unicorn 3001 supports up to 5 different Vocoder types including G.711 A-/U-law, G.726 (Supports bit rates 16, 24, 32 and 40 note:optional), G.723.1, G.729A/B, iLBC(note:optional). The user can configure Vocoders in

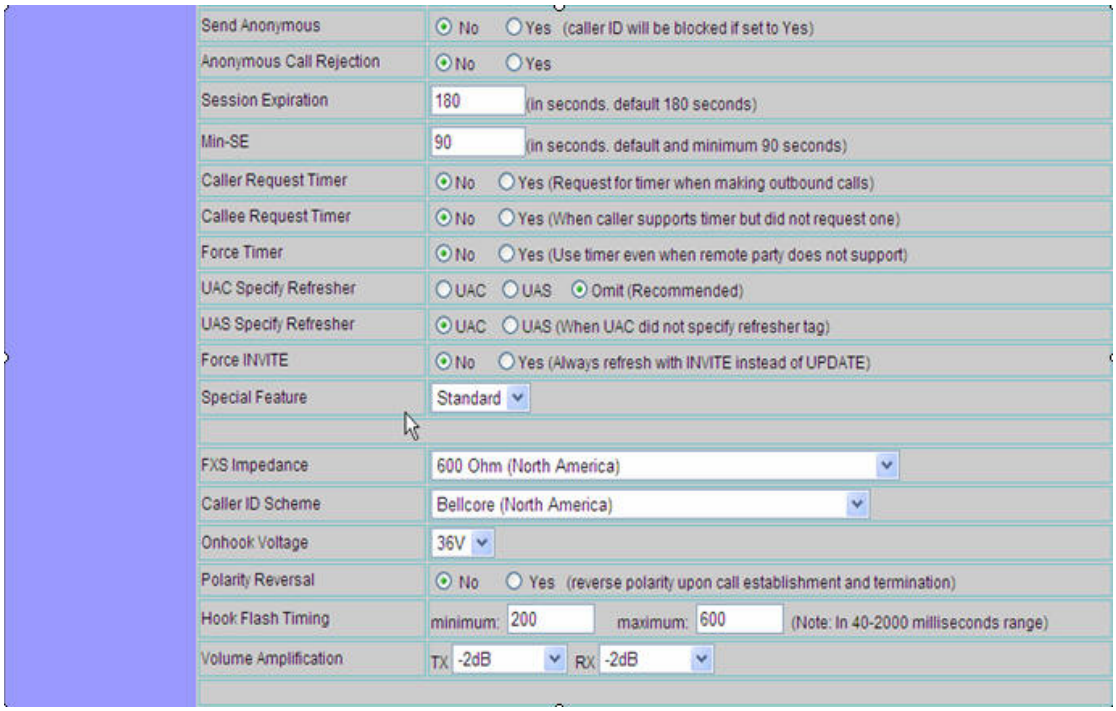
	a preference list that will be included with the same preference order in SDP message. The first Vocoder is entered by choosing the appropriate option in “Choice 1”. The last Vocoder is entered by choosing the appropriate option in “Choice 8”.
G723 Rate:	This defines the encoding rate for G723 vocoder. By default, 6.3kbps rate is chosen.
iLBC Frame Size:	This sets the iLBC size in 20ms or 30ms
iLBC Payload Type:	This defines payload time for iLBC. Default value is **98**. The valid range is between 96 and 127.
G726-16 Payload Type	default is**100** .
G726-24 Payload Type	Default is **99** .

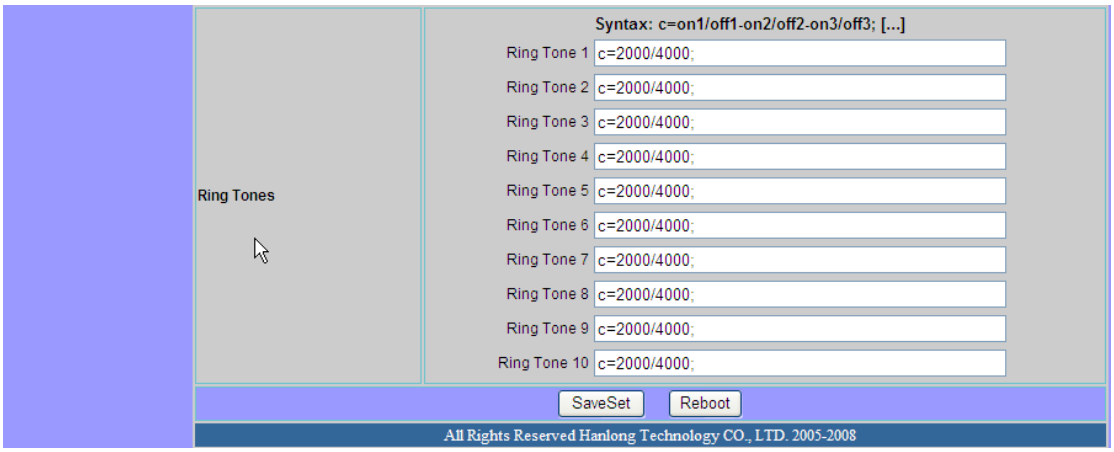


Option	Meaning
G726-40 Payload Type	Default value is **103**, range is from **96** to **123**.
G729E Payload Type:	Default value is **102**, range is from **96** to **127**.
VAD	Default is “No”. VAD allows detecting the absence of audio and conserve bandwidth by preventing the transmission of "silent packets" over the network.
Symmetric RTP	Default is **No**. When set to Yes the device will change the destination to send RTP packets to the source IP address and port of the inbound RTP packet last received by the device.
Fax Mode	Default is **T.30**.

Fax Tone Detection Mode	Default is **Callee**. This decides whether Caller or Callee sends out the re INVITE for T.38 or Fax Pass Through.
Jitter Buffer Type	Select either Fixed or Adaptive based on network conditions.
Jitter Buffer Length	Select Low, Medium or High based on network conditions.
Distinctive Ring Tone	Default is **NO**.
Disable Call-Waiting	Default is **NO**.
Disable Call-Waiting Tone	Default is **NO**. This is to disable the stutter call waiting tone when a call waiting call arrived.
Ring Timeout	Incoming call will stop ringing.
No Key Entry Timeout	Default is **4** seconds.
Early Dial	Default is **No**. Use only if proxy supports 484 response.
Dial Plan Prefix	Sets the prefix added to each dialed number.
Use # as Dial Key	This parameter allows users to configure the **"#"** key to be used as the **Send** (or **Dial**) key. If set to **Yes**, pressing this key will immediately trigger the sending of dialed string collected so far. In this case, this key is essentially equivalent to the **Re(Dial)** key. If set to **No**, this **"#"** key will then be included as part of the dial string to be sent out.
Dial Plan	Dial Plan Rules: 1. Accept Digits: 1,2,3,4,5,6,7,8,9,0 , *, #, A,a,B,b,C,c,D,d 2. Grammar: x - any digit from 0-9; a. xx+ - at least 2 digits number; b. xx. ?at least 2 digits number; c. ^ - exclude; d. [3-5] - any digit of 3, 4, or 5; e. [147] - any digit 1, 4, or 7; f. <2=011> - replace digit 2 with 011 when dialing Example 1: {[369]11 | 1617xxxxxxx} Allow 311, 611, 911, and any 10 digit numbers of leading digits 1617 Example 2: {^1900x+ | <=1617>xxxxxxx} Block any number of leading digits 1900 and add prefix 1617 for any dialed 7 digit numbers Example 3: {1xxx[2-9]xxxxxx | <2=011>x+} Allow any length of number with leading digit 2 and 10 digit-numbers of leading digit 1 and leading exchange number between 2 and 9; if leading digit is 2, replace leading digit 2 with 011 before dialing. 3. Default: Outgoing - {x+} Example of a simple dial plan used in a Home/Office in the US: { ^1900x. | <=1617>[2-9]xxxxxx | 1[2-9]xx[2-9]xxxxxx |

	011[2-9]x. | [3469]11 } Explanation of example rule (reading from left to right): ^1900x. - prevents dialing any number started with 1900 <=1617>[2-9]xxxxxx - allows dialing to local area code (617) numbers by dialing 7 numbers and 1617 area code will be added automatically 1[2-9]xx[2-9]xxxxxx |- allows dialing to any US/Canada Number with 11 digits length 011[2-9]x. - allows international calls starting with 011 [3469]11 - allow dialing special and emergency numbers 311, 411, 611 and 911 Note: In some cases user wishes to dial strings such as *123 to activate voice mail or other application provided by service provider. In this case * should be predefined inside dial plan feature and the Dial Plan should be: { [x*]+ }.
SUBSCRIBE for MWI	Default is **No**. When set to **Yes** a SUBSCRIBE for Message Waiting Indication will be sent periodically.





Option	Meaning
Send Anonymous	If this parameter is set to **Yes**, the "From" header in outgoing INVITE message will be set to anonymous, essentially blocking the Caller ID from displaying.
Anonymous Call Rejection	Default is **NO**, if set to **YES**, the anonymous call will be rejected with busy message.
Session Expiration	Default is **180** seconds.
Min-SE	Default is **90** seconds.
Caller Request Timer	Default is **NO.**
Callee Request Timer	Default is **NO.**
Force Timer	Default is **NO.**
UAC Specify Refresher	Default is **Omit**
UAS Specify Refresher	Default is **UAC**.
Force INVITE	Default is **NO.**
Special Feature	Default is **standard.**
FXS impedance	Select the impedance of analog telephone connected to phone port ..
Caller ID Scheme	select caller ID to suit standard of different area.
Onhook Voltage	Select onhook voltage to suit standard of different area.
Polarity Reversal	Default is **NO.**
Hook Flash Timing	Time period when the cradle is pressed (Hook Flash) to simulate FLASH. To prevent unwanted activation of the Flash/Hold and automatic phone ring-back, adjust this time value.
Volume Amplification	Voice path volume adjustment. Rx is a gain level for signals transmitted by FXS Tx is a gain level for signals received by FXS. Default = 0dB for both parameters. Loudest volume: +6dB Lowest volume: -6dB. User can adjust volume of call on either end using the Rx Gain Level parameter and the Tx Gain Level parameter

	located on the FXS Port Configuration page. If call volume is too low when using the FXS port (ie. the ATA is at user site), adjust volume using the Rx Gain Level parameter under the FXS Port Configuration page. If voice volume is too low at the other end, user may increase the far end volume using the Tx Gain Level parameter under the FXS Port Configuration page.
Ring Tones	This function lets you configure ring tone cadence preferences. User has 10 choices. The configuration, completed in Distinctive Ring Tones block in the same page, applies to ring tones cadences configured here.

6.1.5 Saving the Configuration Changes

Once a change is made, users should click on the “SaveSet” button in the Configuration page, as follow:

The Unicorn 3001 will then display the following screen to confirm that the changes have been saved. Please allow 5 to 10 seconds before rebooting the device.

6.1.6 Rebooting the Unicorn 3001

You can reboot the Unicorn 3001 by clicking on the “Reboot” button after each update to the configuration page. Alternatively, you can reboot by unplugging the power supply of the Unicorn 3001 and then powering it on again. If your Unicorn 3001 ever becomes “stuck” or un-responsive, you can unplug the power supply to reboot it. Frequent rebooting by unplugging the power supply is not recommended and should not be necessary.

6.2 Configuring Unicorn 3001 via Voice Prompt

6.2.1 DHCP Mode

Follow section 5.1 with voice menu option 01 to enable Unicorn 3001 to use DHCP

6.2.2 Static IP Mode

Follow section 5.1 with voice menu option 01 to enable Unicorn 3001 to use STATIC IP mode, then use option 02, 03, 04 to set up Unicorn 3001's IP, Subnet Mask, Gateway respectively.

6.2.3 Configuration through a Central Server

Unicorn 3001 devices can be automatically configured from a central provisioning system.

When Unicorn 3001 boots up, it will send TFTP or HTTP request to download configuration files. There are two configuration files, one is "cfg.txt" and the other is"cfg001fc1xxxxxx", where "001fc1xxxxxx" is the MAC address of the Unicorn 3001.

For more information regarding configuration file format, please refer to the related technical documentation.

The configuration file can be downloaded via TFTP or HTTP from the central server. A service provider or an enterprise with large deployment of Unicorn 3001s can easily manage the configuration and service provisioning of individual devices remotely and

automatically from a central server. The central provisioning system uses enhanced (NAT friendly) TFTP or HTTP (thus no NAT issues) and other communication protocols to communicate with each individual Unicorn 3001 for firmware upgrade, etc.

7 SOFTWARE UPGRADE

To upgrade software, Unicorn 3001 can be configured with a TFTP server where the new code image is located. The TFTP upgrade can work in either static IP or DHCP mode using private or public IP address. It is recommended to set the TFTP server address in either a public IP address.

There are two ways to set up the TFTP server to upgrade the firmware, namely through voice menu prompt or via the Unicorn 3001's Web configuration interface. To configure the TFTP server via voice prompt, follow section 5.1 with option 06, once set up the TFTP IP address, power cycle the ATA, the firmware will be fetched once the ATA boots up.

To configure the TFTP server via the Web configuration interface, open up your browser to point at the IP address of the Unicorn 3001. Input the admin password to enter the configuration screen. From there, enter the TFTP server address in the designated field towards the bottom of the configuration screen.

Once the TFTP server is configured, please power cycle the Unicorn 3001.

TFTP process may take as long as 1 to 2 minutes over the Internet.For those who do not have a local TFTP server, Hanlong provides a NAT-friendly TFTP server on the public Internet for firmware upgrade. Please check the Service section of Hanlong's Web site to obtain this TFTP server's IP address.

NOTES:

When Hanlong ATA boot up, it will send TFTP or HTTP request to download configuration files, there are two configuration files, one is “cfg.txt” and the other is “cfg001fc1xxxxxx”, where “001fc1xxxxxx” is the MAC address of the Unicorn 3001. These two files are for initial automatically provisioning purpose only, for normal TFTP or HTTP firmware upgrade, the following error messages in a TFTP or HTTP server log can be ignored.

8 RESTORE FACTORY DEFAULT SETTINGS

Warning:

Restoring to the factory default settings will delete all configuration information of the device.

Steps to follow in restoring to factory default settings:

a) Press “***” for voice prompt.

b) Enter “99” and then you will hear the voice prompt “Reset”.

c) Enter the number “862584658050”. A "click" sound will be heard.

d) Wait for 15 seconds.

9 TECHNICAL SUPPORT CONTACT

Email: Support@mail.hanlongtek.com