

Connected Machines Anywhere Anytime

WL-430T

3G/4G Wireless Modem WL-430T-A/LT/G/IO/S/AK



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User Manual

Your Feedback Please

We always want you to feel that you made the right decision to use our products. If you have suggestions about our products, documentation, or support, please write or call us.

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WL-430T-A User Manual

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Important Safety Information



WARNING: Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.



ATTENTION: Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you identify a hazard, avoid a hazard, and recognize the consequence.



ATTENTION: This manual is intended for qualified service personnel responsible for setting up and servicing these devices. The user must have previous experience with and a basic understanding of electrical terminology, configuration procedures, required equipment, and safety precautions. **Warning**: This equipment is suitable for use in Class I, Division 2, Groups A, B, C, D or Non-Hazardous Locations only. EXPLOSION HAZARD - Substitution of Any Components May Impair Suitability for Class I, Division II, Do not disconnect equipment unless power has been removed or the area is known to be non-hazardous. Module must be powered by a Class 2 Power Source. **Warning:** The RS-232 serial connector, Ethernet connector and I/O terminal block are not for use in Hazardous Locations; they are only for diagnostics and set-up only.



Warning: When Antenna is installed into ultimate enclosure, it must be threaded to appropriate port to ensure mechanical securement.

Important Notice:

Due to the nature of wireless communications, data transmission and reception can never be guaranteed. Data maybe delayed, corrupted (that is, it may have errors), or be totally lost. Significant delays or losses of data are rare when wireless devices such as Witlinc Technology Wireless products are used in a normal manner with a well-constructed network. Nevertheless, the WL-430T-A should not be used in situations where failure to transmit or receive data could result in damage of any kind to the user or any other party, including but not limited to personal injury, death, or loss of property. Witlinc Technology accepts no responsibility for damages of any kind resulting from delays or errors in data transmitted or received using Witlinc Technology products, or for failure of the (WL-430T-A) to transmit or receive such data.

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1、 Start Here

1.1 About WL-430T-A 3G/4G Wireless Modem with all function

WL-430T-A 3G/4G Wireless Modem can be widely applied to oil & gas, Coal-mining, Iron & Steel, Water, New-Energy and other industrial system. Connected your PLC, VFD, DCS, instrumentation via the modem. Use the GPS function get the machine's Location, the field IO signal can be received by wireless technology.

WL-430T series support the latest 4G/3G high-speed wireless cellular technologies; Supports dynamic or static IP addressed assigned by cell carriers. VPN Client and DDNS Client has been designed for the module, PLC program can be uploaded/downloaded at anyplace. This enables configuration, programming or debugging of almost any industrial device from any location. Whether you're using a GPRS, 3G, EDGE, HSDPA, HSUPA or LTE Connection, you can use your regular configuration software just as you would if you were on site. Allowing HMI, PLCs, sensors etc to communicate with each other. Remote Access removes boundaries, eliminates the need for time consuming site visit and provide a network infrastructure suitable for today's "always-on" society.

All interface and LEDs in the front and with the DIN-Rail in the back make the module well suited for the industry application. In order to protect against issues caused by ground loop, optical isolation was designed between the Ethernet port and Serial port.

3G/4G				
	LTE, DC-HSPA+, HSPA+, HSDPA, HSUPA,	850/900/1900/2100		
Compatible Mobile Networks	WCDMA, GSM, GPRS, EDGE,			
	EVDO, CDMA2000 1X	800/1900		
	HSUPA/HSDPA/UMTS/EDGE/GPRS/GSM			
	LTE	UL/DL: 50Mbps/ 150Mbps		
Band Width	HSDPA+(1)	UL/DL: 5.76Mbps/ 14.4Mbps		
	HSDPA+(2)	UL/DL: 5.76Mbps/ 21Mbps		
	EVDO(3G)	1.8Mbps/ 3.1Mbps		
WiFi				
Standard	Support IEEE 802.11 b/g/n wireless operation standard			
Frequency Band	2.4GHz (ISM Frequency Bands)			
Security	64/128-bit WEP (Wired Equivalent Privacy)			
	WPA & WPA-PSK &WPA2 -PSK(Wi-Fi Protected Access)			
Transmit Power	20dBm			
Data rates	MCS0 -MCS15			
Receiver Sensitivity	-94dBm @ MCS0 & MCS8			
Security	WPA2 & WPA Personal 802.11i AES, TKIP, WEP support			
Others				

Specifications:

Advanced Firewall Features	Network Address Translation (NAT) State full Packet Inspection (SPI) Port Forward, Packets		
Media Access Control	CSMA/CA with ACK		
GPS	According to the NMEA-0183 protocol		
Network Function	WIVPN, DHCP, DNS, DDNS, ICMP		
IO Function	DI×2, DO×2, AI (4-20mA)×1		
Hardware Specifications			
Size	Width 5.3 inches x Height 3.7 inches x Depth 1.6 inches		
Weight	1.2 lbs(543g)		
Enclosure	Aluminum DIN-Rail		
Interface	2×RJ45 (10/100Mbps), 1×Rs232, I/O Port(2×DI, 2×DO, 1×AI), 3× SMA, 1× RS485, 1X1.8V/3V SIM slot		
Operation Temperature	-20°C - 65°C		
Storage Temperature	-30°C - 70°C		
Humidity	95% Maximum (Non-condensing)		
Power	10-31VDC		
Power consumption	dle: 130mA@24VDC , Max: 250mA@24VDC Average:160mA@12VDC		

1.2 Package Contents

The following components are included with the WL-430T-A/AK/LT/G/IO/S, and are required for installation and configuration.



Important: Before beginning the installation, please verify that all of the following items are present

Qty	Part No.	Part Name	PART DESCRIPTION
1	WL-430T-A	3G/4G Industrial Modem	3G/4G Wireless Modem with all
			function
1	WL-0702-0	3G/4G Antenna	3G/4G Omni Antenna(700MHz-
			2700MHz)
1	WL-2502-0	2.4GHz/5GHz Antenna	2.4GHz/5GHz 2dBi Omni Antenna
1	WL-003T-A	3-pin Power Plug	Mating connector used for attachment
			to customer's power supply
1	WL-010T-A	10-pin IO Plug	Mating connector used for attachment
			to customer's IO Signal and Rs485

If any of these components are missing, please contact WitLinc Technology Support for replacement parts.

1.3 System Requirements

The following system requirements are the recommended minimum specifications to successfully install and run:

Software Requirement:

Operating system:

Microsoft Windows XP Professional with Service Pack 1 or 2 Microsoft Windows 7 Professional (32-or 64-bit) Microsoft Windows 2000 Professional with Service Pack 1, 2, or 3 Microsoft Windows Server 2003

Internet Explore

Internet Explorer 6.0 Internet Explorer 8.0 Google Chrome Mozilla Firefox

Hardware Requirement:

Ethernet hub with standard RJ45 Ethernet cable or Ethernet port with RJ45 crossover cable for direct connection to module A Computer with RJ45 Ethernet port 128 Mbytes of RAM minimum, 256 Mbytes of RAM recommended 100 Mbytes of free hard disk space (or more based on application requirements) 256-color VGA graphics adapter, 800 x 600 minimum resolution (True Color 1024 x 768 recommended)

1.4 Power Requirements

The WL-430T-A accepts voltages between 9 and 30 VDC, with an average power draw of 9 watts or less. A detachable power connector comes with the radio, as shown below. The connector terminals are labeled + (positive DC connection) GND (ground connection) - (negative DC connection).

The AC-to-DC power supply adapter may be used. DC power wires must be less than 2 meters in length to meet regulatory requirements.



Important: When wiring the power connector, be sure to observe the proper polarity markings on the power connector. Improper connector wiring can cause serious damage to the WL-430T-A which will not be covered under the Witlinc Technology Warranty.

2 Webpage Configuration

The configuration webpage is used to configure and manage the WL-430T-A. Since the webpage can be accessed remotely as well as local, the WL-430T-A can be configured from any location.

Key benefits of the web based configurator include:

- Login and configure devices parameters
- Connection Status
- Interface Configurations
- Wireless Configurations
- WiVPN Configurations

2.1 Configuration Webpage Setup

1. The default IP address of the WL-430T-A is 192.168.8.1. And DHCP Server is Enable, normally, your PC will be get an IP address which the modem assigned automatically. If your PC did not receive the IP address, please temporarily set the IP address of your PC to 192.168.8.xxx with a subnet of 255.255.255.0.

Internet Protocol Version 4 (TCP/IPv4) Properties					
General					
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.					
Obtain an IP address automaticall	у				
• Use the following IP address:					
IP address:	192 . 168 . 8 . 10				
Subnet mask:	255 . 255 . 255 . 0				
Default gateway:	· · ·				
Obtain DNS server address automatically					
O Use the following DNS server addresses:					
Preferred DNS server:					
Alternate DNS server:	· · ·				
Validate settings upon exit	Advanced				
	OK Cancel				

2. Open the Internet Explorer and enter the WL-430T-A default IP address of 192.168.8.1

G Witlinc - Windows Internet Explorer	
	→ × P Bing
🙀 Favorites 🛛 🙀	
Ø Witlinc	🟠 🔻 🔝 🔻 🖃 📥 🔻 Page 🕶 Safety 🕶

3. Once the WL-430T-A Login Webpage opens, enter the **USERNAME** and **PASSWORD** to login.

Authorization Required				
Please enter your use	rname and password.			
Username	withinc			
Password				

The default Username is "witlinc", and the default Password is "admin".

4. After successful login, the main configuration webpage will be displayed.

WitLinc®		AUTO REFRESH ON
Status System System	System Here you can configure the basic aspects of your device like its hostname or the timezone.	
Administration Time Synchronisation	System Properties	
Reboot	General Settings Logging	
Services	Local Time Fri Apr 21 06:03:42 2017 SYNC WITH BROWSER	
Network	Hostname Willinc Timezone America/Vancouver	
<u>Logout</u>		

2.2 Setup the WL-430T-A IP address

1. Scroll down your mouse to the *Network,Interface*, and choose *LAN*, then click *EDIT*.

WitLinc®			AUTO REFRESH ON
Status	WAN 3G LAN		
System Services	Interfaces		
Interfaces Wifi	Interface Overview		
DHCP and DNS	Network	Status	Actions
Hostnames	LAN	MAC-Address: 00:02:2B:00:3F:88	
Static Routes Diagnostics	br-lan	RX: 13.01 MB (120664 Pkts.) TX: 28.01 MB (85066 Pkts.) IPv4: 192.168.8.1/24	CONNECT STOP EDIT DELETE

WitLinc®	AUTO REFRESH ON
Status	WAN 3G LAN
System	Testavéncen I A N
Services	Interfaces - LAN
Network	On this page you can configure the network interfaces. You can bridge several interfaces by ticking the "bridge interfaces" field and enter the names of several network interfaces separated by spaces. You can also use <u>VLAN</u> notation INTERFACE. YLANER (egg. etb. 1).
Interfaces	
Wifi	Common Configuration
DHCP and DNS	General Setup Physical Settings Firewall Settings
Static Routes	Status Uptime: 2d 21h 10m 28s MAC-Address: 000/2/28/03/588
Diagnostics	BX: 13.04 M8 (12.1082 Pkts) br-lam Tpc: 28 to 10 M8 (85.200 Pkts)
Firewall	IPv4: 192.168.8.1/24
QoS	Protocol Static address
	JPv4 address 192.168.8.1
Logout	IPv4 netmask 255 255 255 0

2. Enter the **IPv4 address**, **IPv4 netmask** and **IPv4 gateway** to be assigned to the WL-430T-A. You will not need to edit the **IPv4 broadcast** and **DNS server** of the parameters at this time.

3. Click Save & Apply. The module will automatically reboot.

4. Once the reboot is complete, the module's IP address will be changed to the address which you set.

5. Close your browser and open a new session. Enter the new IP address of the WL-430T-A to access the configuration webpage.

2.3 Setup WL-430T-A Cellular Provider

The WL-430T-A supports 4G GSM/HSUPA networks. Only one network will be supported at a time. It uses your cellular provider as an ISP (Internet Service Provider) to connect you to the Internet.

The module using GSM technology, such as AT&T, require a SIM (Subscriber Identity Module) card to be installed in the module.

The SIM Card in the WL-430T-A is a smartcard that securely stores the key identifying a cellular subscriber. Generally, you will only need to install a SIM once in the life of the module, and it may be preinstalled by your Witlinc Technology Representative. The SIM card slot is located at the front of the module.



1. Insert the SIM card into the WL-430T-A and cycle power. The SIM card is read by the WL-430T-A upon boot up.

2. Scroll down your mouse to the *Network, Interface*, and choose *3G*, then click *EDIT*.

WitLinc®			AUTO REFRESH O
Status	WAN 3G LAN		
System	Interfaces		
Services	Interfaces		
Network			
Interfaces	Interface Overview		
Wife DHCP and DNS	Network	Status	Actions
Hostnames	LAN	Uptime: 2d 21h 20m 52s MAC-Address: 00:02:2B:00:3F:88	
Static Routes	br-lan	RX: 13.49 MB (125448 Pkts.) TX: 28.43 MB (86933 Pkts.)	CONNECT STOP EDIT DELETE
Diagnostics	3G	Uptime: 1d 2h 13m 40s	
QoS	3g-3G	KX: 18.53 MB (50531 Pkts.) TX: 10.40 MB (99573 Pkts.) IPv4: 10.126.73.175/32	CONNECT STOP EDIT DELETE

3. Enter the Access Point Name (APN) information in the APN field. This information is provided from your cellular provider. Then Click Save & Apply. The module will reboot.

4.After the module reboots, it establishes a PPP (Point to Point Protocol or "dial" up connection) link to your cellular provider network, also called registering on the network, and receives an IP address.

5. When the module has received its IP address from your cellular provider, a connection to the Internet or the cellular network is also available for computers or other devices to connect directly to the WL-430T-A.

6. The GSM network information is now displayed on the Interface Status on the top of the webpage.

	^{──} IPv4: 192.168.8.1/24	
3G 59-3G	Uptime: 22h 55m 12s CONNECT STOP EDIT DELETE TX: 6.13 MB (56815 Ptts.) IPv4: 10.126.73.175/32 CONNECT STOP EDIT DELETE	

2.4 Setup the WAN Interface

The WL-430T-A support layer3 routing function, Enable the Routing Function WAN interface is needed to be configured. The customer can connect two networks which it was different network segments.

1. Insert the Ethernet Cable from Network-A into the WAN port, and insert the Ethernet Cable from Network-B into the LAN port.

2. Configure the LAN interface IP address refer to the Network B, Configure to the same segment with Network B (refer to 2.2 Setup the WL-430T-A IP address)

WitLinc®				AUTO REFRESH ON
Status	WAN 3G LAN			
System Services	Interfaces			
Network	Interface Overview			
Witi DHCR and DNS	Network	Status	Actions	
Hostnames Static Routes	LAN B [®] (<u>***</u>) br-lan	Uptime: 2d 21h 22m 42s MAC-Address: 00:02:28:00:3F:88 RX: 13.56 MB (126076 Pkts.) TX: 28.49 MB (87226 Pkts.)	CONNECT STOP EDIT	DELETE
Diagnostics	3G	IPv4: 192.168.8.1/24 Uptime: 1d 2h 15m 30s		
Pirewall QoS	3g-3G	RX: 18.56 MB (50663 Pkts.) TX: 10.45 MB (100052 Pkts.) IPv4: 10.126.73.175/32	CONNECT STOP EDIT	DELETE
Logout	WAN Emeth0.1	Uptime: 0h 0m 0s MAC-Address: 00:00:00:00:00:00 RX: 0.00 B (0 Plts.) TX: 2.42 MB (7089 Plts.)	CONNECT STOP EDIT	DELETE

3. Mouse Scroll down to the *Network,Interface*, and choose *WAN*, then click *EDIT*.

Interfaces On this page you c interfaces separate	S - WAN an configure the netwo d by spaces. You can a	rk interfaces. You can bridge several interfaces by ticking the "bridge interfaces" field and enter the names of seve so use <u>VLAN</u> notation INTERFACE. VLANIR: (e.g.; etb.). 1).	ral network
Common	Configuration		
General Setup	Physical Settings	Firewall Settings	
	Status	Uptime: 0h 0m 0s MAC-Address: 00:00:00:00:00:00 eth0.1 RX: 0.00 B (0 Ptks) TX: 1.50 MB (4386 Ptks.)	
	Protocol	DHCP client	
Hostname to	send when requesting DHCP	Wittinc	
BACK TO OVERVIE	EW	SAVE & APPLY S	AVE

Setup the Protocol

- If the WAN IP address is assigned by the DHCP from Network-A, then set it as DHCP Client, the WAN port can get the IP address from Network-A DHCP Server Automatically.
- If the WAN IP address is assigned by your provider through the PPPOE, then select the PPPOE label. And enter the Username and Password. You can get the Username and Password from the Network-A Provider. Then the WAN Port will receive a static IP address or a dynamic IP address automatically.
- After the Protocol configuration complete, Click the Save & Apply, the module will reboot.

Common C	onfiguration			
General Setup	Physical Settings Firewall Set	ettings		
	Status	RX: 0.00 B (0 Pkts.) pppoe-wan TX: 0.00 B (0 Pkts.)		
	Protocol	PPPoE	•	
	PAP/CHAP username	\bigcirc		
	PAP/CHAP password	\bigcirc	ø	
	Access Concentrator	auto @ Leave empty to autodetect		
	Service Name	auto		

• After the module reboot, the Network-A and Network-B will be connected, and communication to each other.

2.5 Setup the WiFi Function

1. WiFi Function has been integrated into the module, with this function customer can access the module by the mobile devices which has WLAN function. The function is based on 802.11n, Configure the WiFi Function you can scroll your mouse to the *Network* then choose *WiFi*, you can see the webpage as below:

WitLinc [®]									AUTO REFRESH C
Status	radio0: N	/laster "W	ītLinc"						
System	\ \/ ii	roloc		iow					
Services	vvii	leies	S Overv	iew					
Network									
Interfaces		2	Seneric MAC8	0211 802.11bgn (radio0)					SCAN ADD
Wifi	-		.nannei. 11 (2.40	2 GHZ) Dicate. : Molty's					
DHCP and DNS		09	SSID: WitLinc 8 BSSID: 00:02:2	Mode: Master B:00:3F:88 Encryption: None				DISABLE	EDIT REMOVE
Hostnames									
Static Routes									
Diagnostics	Ass	socia	ted Sta	tions					
Firewall	/ (00								
QoS									
Locout		S	SID	MAC-Address	IPv4-Address	Signal	Noise	RX Rate	TX Rate
Logout					No informatio	n available			

you

2. Enable WiFi Function, Set the Module WiFi mode, SSID, Encryption.

If you want to connect to a excisted WiFi ,please scroll down your mouse to the **SCAN**, and click it, then can brows which you need.

If you want want use the module as WiFi master or others, please scroll down your mouse to the *Edit,* and click it, you need to edit some parameters as follows.

WitLinc®	AUTO R	EFRESH ON
Status System	The Device Configuration section covers physical settings of the radio hardware such as channel, transmit power or antenna selection which are shared among all wireless networks (if the radio hardware is multi-SSID capable). Per network settings like encryption or operation mode are grouped in the <i>Interface Configuratio</i> .	l defined n.
Services	Device Configuration	
Network	General Setup Advanced Settings	
Interfaces Wifi DHCP and DNS	Status Mode: Matter SID: Within: BSDD: 0002-2600-5F88 Encryption: None Channet: 11 (2,422 CHz) Tx-Power: 20 dBm 0% Signate: 0 dBm Noise: 0 dBm Bitrate: 0.0 Mbit/s Country: 00	
Hostnames	Wireless network is enabled DISABLE	
Static Routes Diagnostics	Mode Channel Width Operating frequency N * 11 (2462 MHz) * 40 MHz *	
Firewall QoS	Transmit Power 20 dBm (100 mW) • • dBm •	
Logout		
WitLinc®	AUTO	REFRESH ON
Status	Interface Configuration	
System		
Services	General Setup Wireless Security MAC-Filter	
Network	ESSID WILLING	
Interfaces		
	Mode Access Point	
Wifi	Mode Access Point Network I lan: 22	
Wifi DHCP and DNS	Mode Access Point Network Ian: 22* war: 22*	
Wifi DHCP and DNS Hostnames	Mode Access Point Network Ian: 27 wan: 27 create:	
Wiff DHCP and DNS Hostnames Static Routes Diagonatics	Mode Access Point Network Ian: 222 wan: 225 create:	
Wifi DHCP and DNS Hostnames Static Routes Diagnostics Firewall	Mode Access Point • Network Ian: 222 · wan: 225 create: · • Choose the network(s) you want to attach to this wireless interface or fill out the create field to define a new network •	rk.
Wifi DHCP and DNS Hostnames Static Routes Diagnostics Firewall QoS	Mode Access Point • Network Ian: 222 · wan: 225 · · o Choose the network(s) you want to attach to this wireless Interface or fill out the create field to define a new network · Hide ESSID ·	ırk.
Wifi DHCP and DNS Hostnames Static Routes Diagnostics Firewall QoS	Mode Access Point • Network Ian: 200 wan: 200 wan: 200 creater	ırk.

WitLinc [®]		AUTO REFRESH ON
Status	Wireless network is enabled DISABLE	
System	Mode Channel Width Operating frequency N ▼ 11 (2462 MHz) ▼ 40 MHz ▼	
Services	Transmit Power 20 dBm (100 mW)	
Network	€ dBm	
Interfaces		
Wifi		
DHCP and DNS	Interface Configuration	
Hostnames		
Static Routes	General Setup Wireless Security MAC-Filter	
Diagnostics	Encryption WPA2-PSK *	
Firewall	Cipher Alto	
QoS	Cipiter	
	Key	
<u>Logout</u>		

WiFi	Description
Mode	Configure the WiFi operating frequency
SSID	Assign a network name (SSID) of up to 32 characters. The Module uses this name in all network references. All devices in a network must have the same SSID.
Channel	Select a channel and frequency range for the network or accept the default value. Network channels allow radios to avoid sharing a frequency with other networks in the same location. The channel list indicates the channel number as well as the frequency (2.4 GHz or 5 GHz).
Encryption	Encryption scrambles data so that only intended viewers can decipher and understand it. Although "none" is an available encryption type, Witlinc Technology strongly recommends encrypting all data sent and received from every radio on your network, to help prevent your data from being intercepted and decoded.
	WPA-PSK: Preshare key mode To use WPA-PSK encryption on packets sent between the modules, select WPA-PSK in the Encryption field. Next, in the key phrase field, enter a pass phrase of between eight and 63 normal keyboard characters.
	This phrase automatically generates an encryption key of 128 hexadecimal characters. The default pass phrase is "password" (lower case, no quotes).
	WPA2-PSK: based on IEEE 802.11i Use WPA-PSK encryption on packets send between the modules, select WPA-PSK in the Encryption field.
key	You must enter the password in this field, after set the encryption mode.



Important: you must assign the same Network SSID and WPA phrase to the other devices which communication to the master module

3. All the parameter configured completely, Click **Save & Apply**, the module will reboot

4. After the module reboot, the WiFi parameter will be effective.

2.6 Setup the WiVPN Function

1. While in client site, WiVPN actively makes connection to the server side, if passed the server authentication, a VPN connection would be established. Below are steps to make connection to a WiVPN server:

- 1. Before config WiVPN client, you need to get 3 files from WiVPN server administrator: ca.crt, clientX.crt and clientX.key
- 2. And ask WiVPN server administrator for parameters about server address, server port and cipher.
- 3. Through web management interface: *Services->WiVPN*, you can see sample instances as show below.

WitLinc®							
Status System	WiVPN						
Dynamic DNS	WiVPN instances						
WIVPN	Below is a list of configured WiVPN inst	ances and their curr	ent state				
Network		Enabled	Started	Start/Stop	Port	Protocol	
Logout	sample_client		no	START	443	udp	EDIT

4. Click "EDIT" button corresponded to "sample_client". And type in WiVPN server address (IP or FQDN) and server port (there must have space between server address and server port). As show below.

to advanced configuration »		
verb	3	•
Verb	Set output verbosity	
port	443	
	O TCP/UDP port # for both local and remote	
tun_ipv6	O Make tun device IPv6 capable	
nobind		
comp_lzo	yes	•
	O Use fast LZO compression	
proto	udp	•
	O Use protocol	
client	 Ø Configure client mode 	
client to client		

5. Click "*Switch to advanced configuration* >>" as show below.

WitLinc®				UNSAVED CHANGES: 3
Status System	Overview » Instance "sample_client	t"		
Services Dynamic DNS WiVPN	Switch to advanced configuration =			
Network	verb	3 Ø Set output verbosity	Ŧ	
Logout		2113		

6. Click "*Cryptography*" as show below.

WitLinc®	UNSAVED CHANGES: 3
Status System Services Dynamic DNS WVPN	Overview » Instance "sample_client" <u>= Switch to basic configuration</u> Configuration category: Service <u>Networking</u> <u>VPN</u> <u>Corptography</u>
Network Logout	Service

7. Type in cipher, upload ca.crt to ca field, upload clientX.crt to cert field and upload clientX.key to key field. As show below the cipher is "AES-256-CBC".

Configuration category: Service	Networking	<u>VPN</u>	Cryptography
---------------------------------	------------	------------	--------------

cipher	AES-256-CBC	
	C Encryption cipher for packets	
no_replay	Ø Disable replay protection	
mute_replay_warnings	Silence the output of replay warnings	
no_iv	 Ø Disable cipher initialisation vector 	
tls_server	 Enable TLS and assume server role 	
tls_client	Enable TLS and assume client role	
ca	Uploaded File (1.77 KB) 🔗	
	O Certificate authority	
cert	Uploaded File (5.37 KB) 🛛 😭	
	O Local Certificate	
key	Uploaded File (1.66 KB) 🖉	
	Clocal private key	
single_session	Allow only one session	

If no corresponded fields exist, scroll down the page and select field from "Additional Field", click "ADD" button to add the field. As show below.

	mute_	replay_warnings	O Silence the output of replay warnings
		no_iv	O Disable cipher initialisation vector
	_	tls_server	$m{\Theta}$ Enable TLS and assume server role
Additional Field Secret dis_client dis_client dis_client dis_client dis_client dis_client dis_client ca key method dis_clicher single_session dis_timeout reneg_pties reneg_pties reneg_pties reneg_pties tis_exit	▲ tls_client		• Enable TLS and assume client role
	cert	Uploaded File (5.37 KB) 🛛 🛃	
	key	Uploaded File (1.66 KB)	
		single_session	Local private key Allow only one session
		tls_exit	Θ Exit on TLS negotiation failure
hand_window tran_window tls_auth		auth_nocache	Don't cacheaskpass orauth-user-pass passwords
Additional Field V	ADD		

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SAVE & APPLY SAVE

SAVE & A

8. Check all your configurations are correct and uploaded the 3 files to corresponded fields, click "SAVE" button as show below.

cert	Uploaded File (5.37 KB) 🔗
	❷ Local certificate
key	Uploaded File (1.66 KB) 🛛 🛃
	Ø Local private key
single_session	Allow only one session
tls_exit	Exit on TLS negotiation failure
auth_nocache	□ ❷ Don't cacheaskpass orauth-user-pass passwords
Additional Field V ADD	

 Through web management interface: Services->WiVPN, check "Enabled" checkbox, and click "SAVE" button. As show below.

VIVPN Instances	etancas and their surrar	et etato				
elow is a list of configured wivery in	Enabled	Started	Start/Stop	Port	Protocol	
sample_client		no	START	443	udp	EDIT DELETE
Clienteenfig	uration for an ethernet bri					

10. Wait a while, you can see the client started, now the VPN connection is established. By clicking "*STOP*" button you can stop WiVPN client. As show below.

WiVPN							
WiVPN instances							
Below is a list of configured WiVPN	instances and their cu	rent state					
	Enabled	Started	Start/Stop	Port	Protocol		
sample_client		yes (12707)	STOP	443	udp	EDIT DELETE	
Client confi	iguration for an ethernet	bridge VPN 🔻	ADD				
						SAVE & APPLY SAVE	ESET
sample_client Client confi	Enabled	bridge VPN	Start/Stop	Port 443	udp	EDIT DELETE SAVE & APPLY SAVE R	ESE

3. Hardware Installation

Power Supplies installation Antenna Installation IO Terminal Installation Rs232 Installation Rs485 Installation LED indicators

3.1 Power Supplies installation

The WL-430T-A accepts voltages between 9 - 30 VDC, two step complete the power supply wiring.

1. Connect the 24VDC cable to the power terminal, Please be careful don't connect the positive to the negative terminal.



- 2. Insert the Power Terminal into the module, then tighten the screws.
- 3.2 Antenna installation

The module designed of 3 antenna ports, 3G/4G antenna ports, GPS ports, WiFi ports. Each module must have a 3G/4G antenna connected to the 3G/4G antenna port on the WL-430T-A, without the antenna the module will not connect to the internet. If the WiFi and GPS function will be used, the WiFi and GPS antenna must be connected to the corresponding interface.



- Small 3G/4G antennas with a reverse polarity SMA connector can be mounted directly on the radio. Screw the antenna onto the antenna port connector until it is snug. The frequency range must between 700MHz – 2700MHz.
- 2. Screw the WiFi antenna onto the WiFi antenna port connector, the WiFi frequency range must between 2400MHz-2483MHz or 5000MHz-5800MHz.



3. If you want to get the location information from the module, the GPS antenna should be screwed onto the GPS antenna port.





Important: Antennas selected should not exceed a maximum gain of 5 dBi under standard installation configuration. In more complex installations, it is imperative that the installer follow maximum dBi gain guidelines in accordance with the radio communications regulations of the Federal CommunicaCommission (FCC), Industry Canada, or your country's regulatory body (if used outside the Canada).

3.3 IO terminal installation

There are two digital input/output and one analog terminals on the module. We can monitor the IO signal by the Serial port. Also the IO signal can be controlled by the serial port.

DO-2	Digital Output Signal No.2 terminal		
DO-1	Digital Output Signal No.1 terminal		
DO-C	Digital Output ground terminal		
DI-2	Digital Input Signal No.2 terminal		
DI-1	Digital Input Signal No.1 terminal		
DI-C	Digital Input ground terminal		
Al+	Analog input positive terminal		
AI-	Analog input negative terminal		
Rs485 +	Rs485 positive terminal		
Rs485 -	Rs485 Negative terminal		

3.4 Rs232 Serial port installation

The use of hardware handshaking (control and monitoring of signal lines) depends on the requirements of the networked device. If no hardware handshaking will be used, the cable to connect to the port is as shown below:





With the package there are two serial cable, one cable is RJ45 to DB9 Female connector, and another is the serial Null-Modem cable.

DB9 to RJ45 Cable





RS-232: Modem Connection (Hardware Handshaking Required)

This type of connection is required between the module and a modem or other communication device.



The "Use CTS Line" parameter for the port configuration should be set to 'Y' for most modem applications.

RS-232: Null Modem Connection (Hardware Handshaking)

This type of connection is used when the device connected to the module requires hardware handshaking (control and monitoring of modem signal lines).



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3.5 Rs485 Serial port installation

The RS-485 interface requires a single two or three wire cable. The Common connection is optional, depending on the RS-485 network devices used. The cable required for this interface is shown below:



IO Terminal

Note: Terminating resistors are generally not required on the RS-485 network, unless you are experiencing communication problems that can be attributed to signal echoes or reflections. In these cases, installing a 120-ohm terminating resistor between pins Rs485+ and Rs485- on the module connector end of the RS-485 line may improve communication quality.

RS-485 and RS-422 Tip

If communication in the RS-422 or RS-485 mode does not work at first, despite all attempts, try switching termination polarities. Some manufacturers interpret + and -, or A and B, polarities differently.

LED	Color	Status	Description
DO-2	Green	Steady	Digital Output signal No.2 is Closed
		Unlighted	Digital Output signal No.2 is Open
DO-1	Green	Steady	Digital Output signal No.1 is Closed
		Unlighted	Digital Output signal No.1 is Open
DI-2	Green	Steady	Digital input signal No.2 is Closed
		Unlighted	Digital input signal No.2 is Open

3.6 LED indicators

DI-1	Green	Steady	Digital input signal No.1 is Closed
		Unlighted	Digital input signal No.1 is Open
Lan	Green	Steady	Lan Communication Failed
	Green	Flashing	Lan Communication is successful
		Unlighted	No Ethernet Cable has been detected
WAN	Green	Steady	WAN port Communication Failed
	Green	Flashing	WAN port Communication is ok
		Unlighted	No Ethernet Cable has been detected
WiFi	Green	Steady	WiFi Function is enable
		Unlighted	WiFi Function is disable
3G/4G	Green	Steady	3G/4G has connected to the internet
	Green	Flashing	Module is Connecting to the Base Station or the sim card is invalid
PWR	Green	Steady	Power supply is normal
SYS	Green	Steady	System has err occurs

4. Support, Service & Warranty

4.1 Contacting Technical Support

WitLinc Technology, Inc. is committed to providing the most efficient and effective support possible. Before calling, please gather the following information to assist in expediting this process:

1 Product Version Number

2 System architecture

3 Network details

If the issue is hardware related, we will also need information

regarding: 1 Module configuration

2 Module operation and any unusual behavior

- **3** Configuration/Debug status information
- 4 LED patterns

5 Details about the serial, Ethernet or other interfaced to the module.

Note: For technical support calls within the United States, an emergency after-hours answering system allows 24-hour/7-days-a-week pager access to one of our qualified Technical and/or Application Support Engineers. Detailed contact information for all our worldwide locations is available on the following page.

Internet	Web Site: www.witlinc.com/ E-mail address: support@witlinc.com
Tel	+1 778-300-9900
Fax	+1 778-3009080

4.2 Warranty Information

For complete details regarding WitLinc Technology's TERMS & CONDITIONS OF SALE, WARRANTY, SUPPORT, SERVICE AND RETURN MATERIAL AUTHORIZATION INSTRUCTIONS please see the documents on the Product DVD or go to www.witlinc.com