

# BX-3G user manual

Professional version

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## 1. 1.Products description

### 1.1. product details

BX-3G hardware frame is cluster with the high performance of 32 bit processor and industrial level 3G wireless module ,use the high automatically and modularization built-in system as the software platform ,supply the safe ,stable and fast connection with the wireless network to users by public 3G network(WCDMA or EVDO)

### 1.2. product features

#### ✧ Fast connection

BX-3GW use the HSDPA/HSUPA connection, supply 7.2Mbps downward speed and 5.76Mbps upward speed

BX-3GE use the EVDO RevA connection, supply 3.1Mbpsdownward speed and 1.8Mbps upward speed

#### ✧ Industrial design

Adopt high performance wireless module

Adopt metal shell; Level of protection IP30, used for industrial control field

Environment temperature: -30℃~70℃

#### ✧ High reliability

Detect the wireless link status in real time; Will re-dial automatically when it lost connection;

Guarantee the equipment keeping usability

With the design of anti-interface, anti-static, and it could used for wicked electromagnetic environment

#### ✧ Simple operation and it' s convenient for maintenance

Rich way of network management, supports SMS, WEB, a variety of configuration method of network management platform, convenient and easy to use, rapid deployment

WEB interface categorized according to the IT staff habits, clear and promote efficiency for user configuration

Support local or remote reading logs, through the log to help engineers to quickly solve problems, improve work efficiency

### 1.3. Parameters

- ✧ Power : +5V DC IN
- ✧ Average working electricity: 650mA@+5V DC
- ✧ Maximum instant electricity: 2.0A@+5V DC
- ✧ Working frequency band: BX-3GW: UMTS/HSDPA/HSUPA 850/1900/2100MHz  
GSM 850/900/1800/1900MHz  
BX-3GE: CDMA2000 1x/EVDO Rev.A 800/1900MHz
- ✧ Working temperature: -30°C—70°C
- ✧ Size : 124mm X 100mm (not including the antenna )

### 1.4. Product image



### 1.5. Interface instruction

Front side from right to left:

- ✧ DC power interface, used for +5V input.
- ✧ Built-in the RST button, used for factory reset .when the system is running well, long press the button for 5 seconds, then reset the device and then restart .
- ✧ Red PWR light means the power is on in the system .

- ✧ Yellow YS light ,heartbeat flashing means system running well (light on when starting)
- ✧ Green GTM light(light on when starting)

Light status	Indication
Fast flashing	dialing
slow flashing	Finish the dialing ,and connect to the 3G
heartbeat flashing	Connect with the transfer server
Light on (not start processing) or light off	Dialing error

- ✧ 10/100M adaptive RJ45 Ethernet interface, used to connect to each type of control card.The RJ45 interface connection with light is located in the lower left of the interface, the Ethernet disconnected if light off, light on normally shows that has been properly connected, occasionally flashing indicates that there is data transmission.
- ✧ Rear panel have standard 50 ohm SMA antenna interface and draw out SIM card interface,used to connect to the 3G wireless network required all band antenna and placed 1.8/3 v UIM/SIM card.

## 2. WEB setting page

### 2.1. Preparation

- ✧ Connect the BX-3G with 5V power
- ✧ Open the computer network connection polarity, double click the “Internet version 4 (TCP/IPv4) ” , set ip as “automatically Obtain IP” :

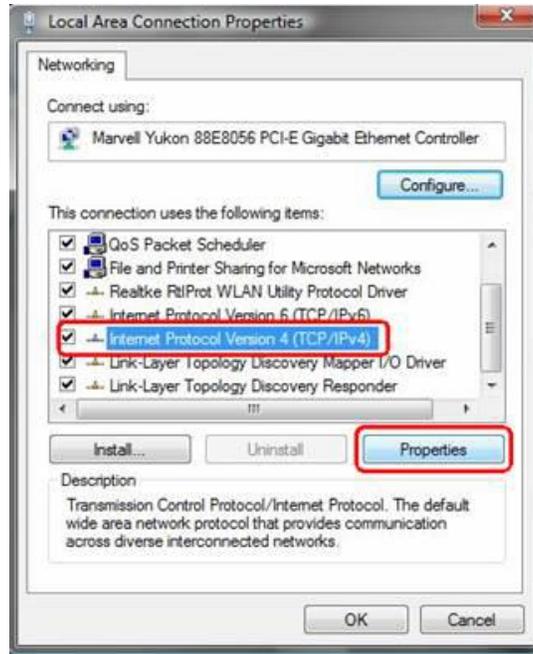
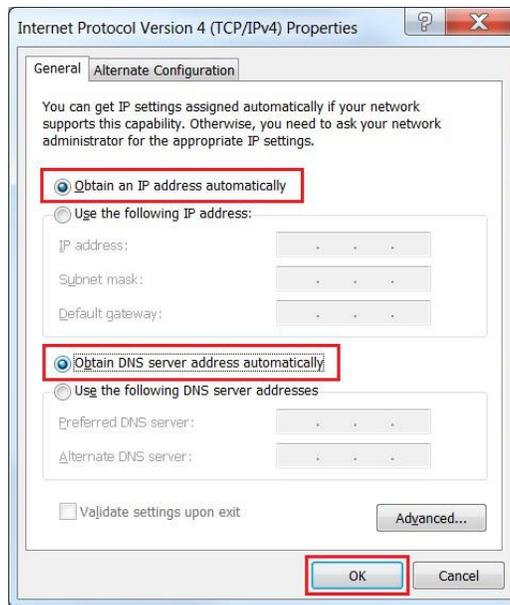
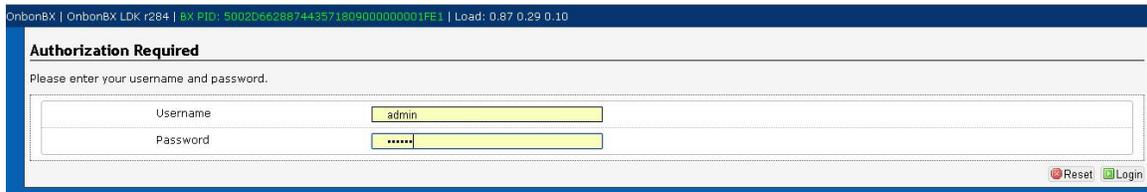


Image 2-1 network connection property



Picture 2-2 obtain IP automatically

- ✧ Use the cross network cable to connect the computer with 3G router ,the computer will automatically obtain the correct IP address
- ✧ Open IE explore, input the “http://192.168.1.1” , enter in, then display the below:



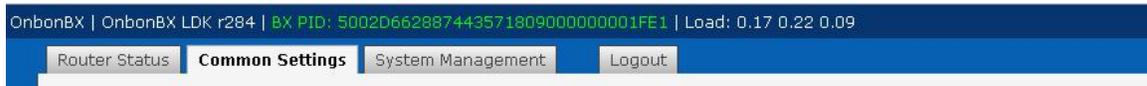
Picture 2-3 log page

- ✧ Input the user name “admin”, password “123456” (factory default password), click the log in button, then set in the router

## 2.2. Set parameters in the page

### 2.2.1. Page menu

There is “router status” ” common settings ” ” system management” “log out” in the menu. Router status used for display the router status ,no setting function ,general setting including the LAN setting ,3G dialing setting ,transfer server setting and so on. In the system management ,can set the router language ,change the admin password, update the firmware, backup and recover the router setting,exit used for exit the page.



Picture 2-4 set page menu

### 2.2.2. Common settings

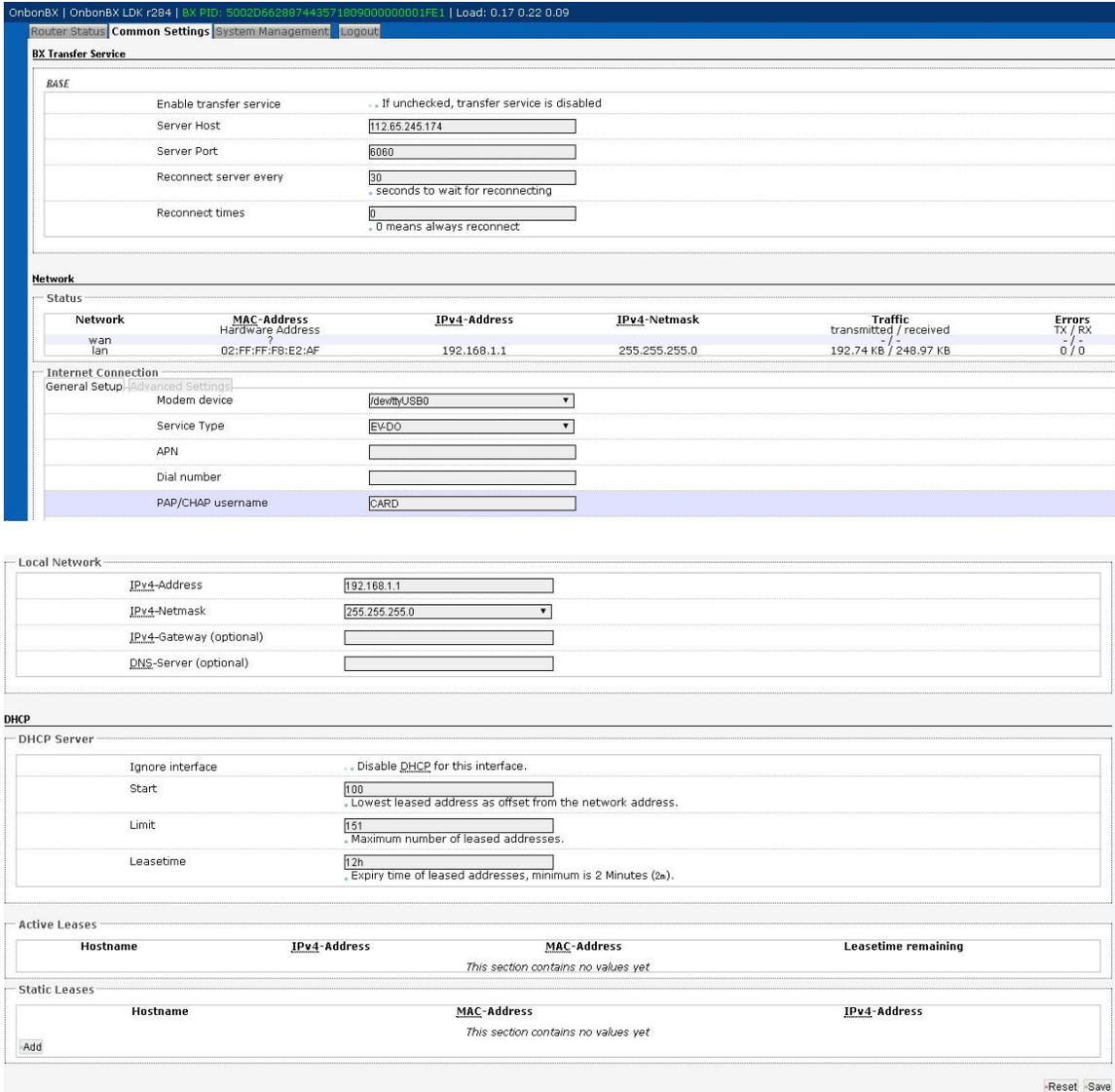
This page contain the common setting ,such like transit server setting ,3G dial-up setting ,LAN setting and so on. After modify the configuration ,need restart then the new configuration will take effect.

“network connection” is used for 3G dial up ,mainly including the operator specific dial number, user name, password, etc. In addition to special applications, please do not modify this page parameters.

Local network” and “the DHCP service” is used to set the router LAN IP address, subnet mask, DHCP service pool, and the lease time, etc.no need to modify if no special requirements.user can specific MAC address in the “static address allocation” .The router’s default IP is “192.168.1.1”.

“BX transit service” is for setting up the connection parameters with onbon transit network management platform .if not use onbon server , you can disable this function.user can set up including server host names or IP, port, reconnect the time interval, the number of connection attempts. In addition to the domain name/IP if other parameters do not fill out show that use the default Settings.

In user can check the 3G WAN IP ,MAC and traffic information in the "status" column .in the DHCP client "activity" column ,user can view the current assigned IP and MAC information such as the host.



Picture 2-5 common setting pages

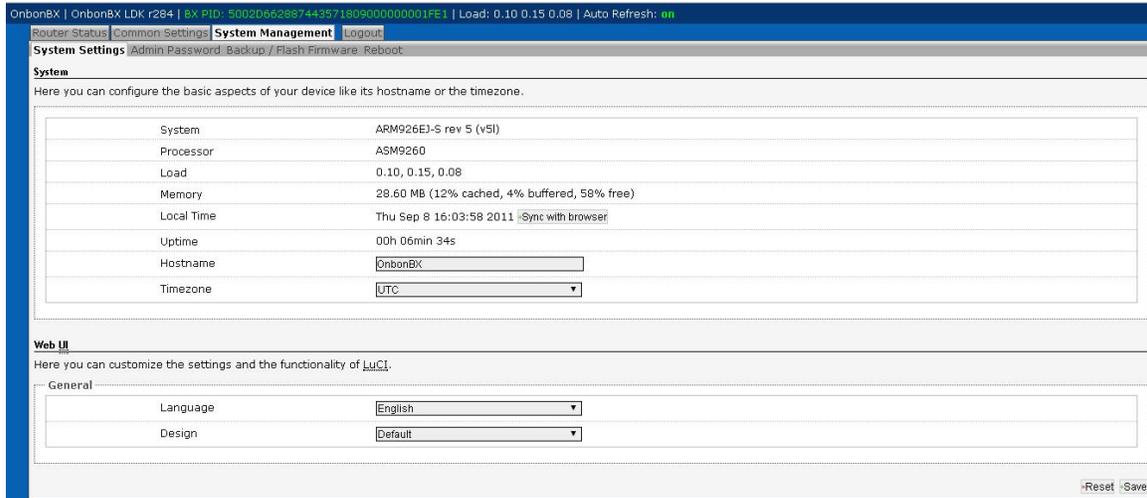
### 2.2.3. System management page

There is "system setting" "admin password" "backup/Flash firmware" and "reboot" backup" " in this page.



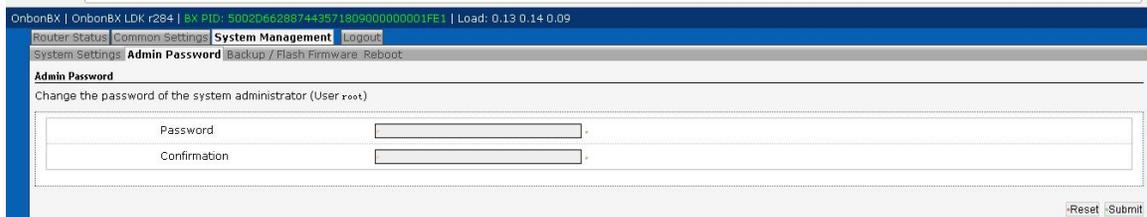
Picture 2-6 system management menu

- ✧ “system settings ”page is used to set the router host name, time zone, the language of the page
- ✧ the browser “synchronous time” button to make the router system time and the browser’s system time synchronization.



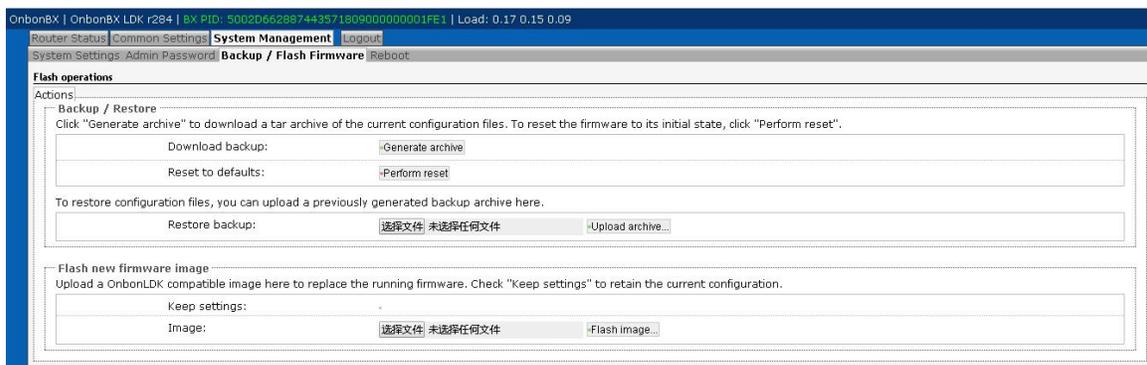
Picture 2-7 system setting page

- ✧ “change password” is used for changing the administrator password



Picture 2-8 change password page

- ✧ “backup/flash firmware” “used for backup and restore the router ,and make firmware update



Picture 2-9 backup/Flash firmware

” restore” button used for reset the router as the default status when factory.after click it ,router will restart and reset the factory configuration.

Click ”generate backup” button will download the router configuration package of documents called ”OnbonBX-YYYY-MM-DD.tar.gz. , is used to restore the configuration in the future.

Click on the ”configuration” input box or ”browse”Button in the file selection window to restore the configuration of the compressed package, click the ”upload backups”Button, the router will automatically restart and recovery package in the configuration.

flash firmware” column is used to upgrade the router firmware, ”configuration” option is used to choose whether to keep the current configuration and refresh the firmware.Click on the ”image file” input box or subsequent ”browse”button in the file selection window, select the firmware file, click on the ”flash firmware”Button, the router will upload the firmware file and simple judge format.if the firmware file format is correct, will pop up the new firmware verification page.because the router does not guarantee the firmware file integrity, so pls check the MD5 checksum nuclear before refresh, if there are any errors, please click ”cancel” button to suspend the refresh.Verify the firmware is correct and then click the ”perform” button, the router will refresh the firmware, duration of 2-3 minutes, do not power off when firmware refreshing.

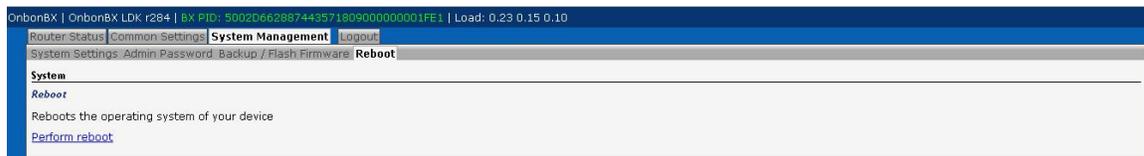


图 2-9 upload wrong firmware



Picture 2-9 flash firmware

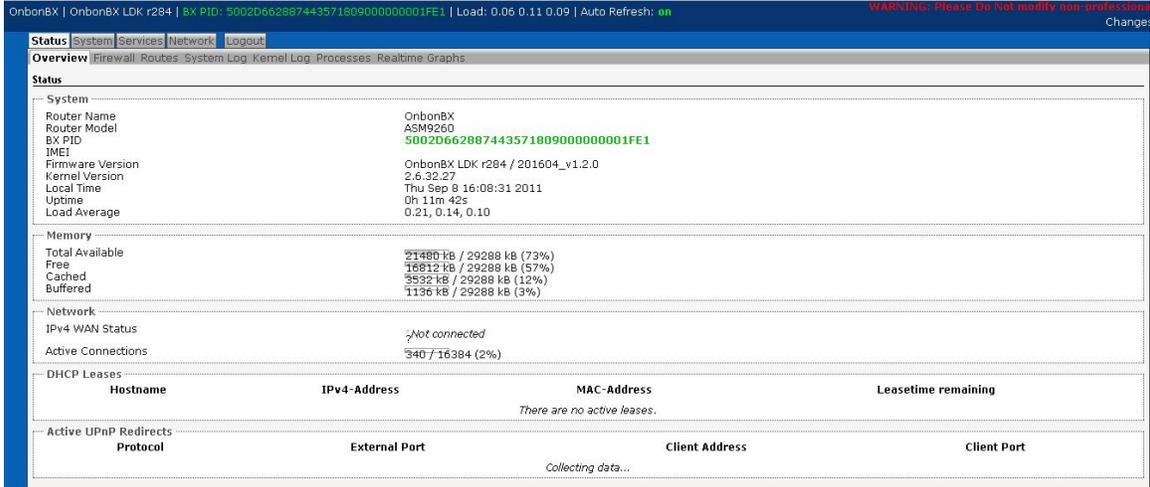
✧ In the ”reboot” page , click the ”perform reboot” page link to restart the router.



Picture 2-10 reboot page

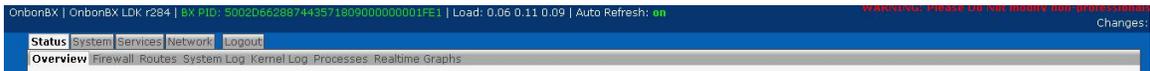
## 2.3. Advance setup page

Search “http://192.168.1.1/admin” , after 2-3s input the password and click log in button to the advance setup page:

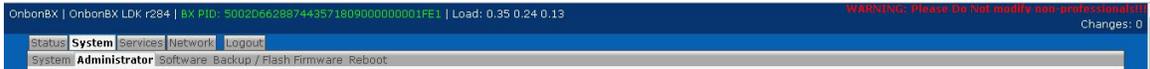


Picture 2-11 advance home page

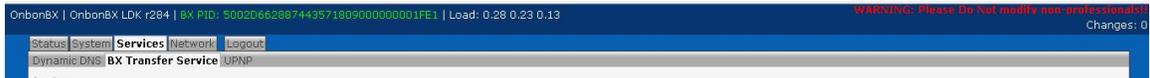
There is status、system 、services and network menu in the router advance setting page .we don’ t suggest normal person to modify here if no professional technology.



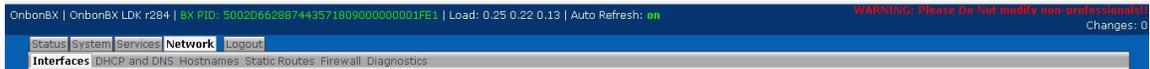
(a) status menu



(b) system menu



(c) services menu



(d) network menu

Picture 2-12 advanced menu

## 2.4. Attentions

- ✧ after modify the configuration,need manual restart the router to take effect.
- ✧ after change the page language, click the exit menu and log in again .
- ✧ after change password ,need use the new password to log in.
- ✧ after perform the reboot ,router will restart

- ✧ Before flash the firmware,pls check the firmware verify value firstly
- ✧ Don' t modify the 3G dial parameters at will.
- ✧ Pls don' t power off during flash the firmware.

### 3. SMS command configuration

BX-3G router can change the part of configuration by SMS ,the format is :(PASS#CMD\*PARAM)

#### 3.1. Basic format

Basic format SMS: (PASS#CMD\*PARAM)

“PASS” is the default password for verify the SMS,default is “A55A” .

“CMD” is command key word,used for indicating the configuration project.

“PARAM” is the parameter filed of the configuration items ,different item have different parameter quantity ,may have multiple or nothing ,if multiple need use “\*” to separate.

One SMS can send multiple command ,named group command ,use the” #” to separate the command.it allowed maximum 8 commands together for one group ,if exceed than 8 commands ,then need cut the extra ones .if the parameters have “\*” or “#” (contain “/” after the escape character),must add the “/” in front of the escape character.

#### 3.2. Command keyword list

Keyword		Parameter quantity	Function
Integrity Field	Short field		
APN	3	1	set the APN of the 3G wireless network
ECH	c	1	open or close the SMS reply
LIP	i	2	set router LAN IP and mask code
PWD	p	2	modify the SMS command verify password,take effect after set it.
RST	r	0	restart the router Ps: the restart command must use separately or put at end of the group command
SIP	1	1/2	Set transfer server IP and port ,take effect after next connection with server
SDN	2	1/2	Set transfer server name and port ,take effect after next connection with server The usage for this command is same to the SIP ,domain name can be exchanged with the IP
TPN	t	1	Add the phone number of which can send SMS PS: pls avoid to use this command by empty parameter,will clean all the added phone number.
WDC	w	3	Set the 3G wireless network dial parameters
STA	s	0	query the device running situation ps: this command only can be used separately ,and will not effected by the ECH.
STE	e	0	Query the device extend situation ps: this command only can be used separately ,and will not effected by the ECH.

### 3.3. Command samples

Command	Samples	Description
APN	(A55A#apn*3gnet)	Set the 3G network APN as 3gnet
	(A55A#3*3gnet)	
ECH	(A55A#ech*1)	Open the SMS reply
	(A55A#e*0)	Close the SMS reply
LIP	(A55A#lip*192.168.1.1*255.255.5.255.0)	Set the router LAN IP as Subnet mask :255.255.255.0
	(A55A#i*192.168.1.1*255.255.255.0)	
PWD	(A55A#pwd*CFPW*CFPW)	Set the SMS verify password as CFPW,the password can be changed after set two sample parameters
	(A55A#p*CFPW*CFPW)	
RST	(A55A#rst) 或 (A55A#r)	-
SIP / SDN	(A55A#sip*112.65.247.181*5010)	Set the transfer server IP as 112.65.247.181 Port is 5010
	(A55A#sdn*112.65.247.181*5010)	
	(A55A#1*www.onbonbx.com)	Set the transfer server domain name as www.onbonbx.com port is default
	(A55A#2*www.onbonbx.com*)	
TPN	(A55A#tpn*138000011111)	Add 138000011111 as the setting phone number
	(A55A#t*)	clean all the configuration phone
WDC	(A55A#wdc**card*card)	set the 3G APN as empty ,user name is card ,password is card
	(A55A#w*3gnet*uninet*)	Set the 3G wireless network ,the APN is 3gnet User name is uninnet, password is empty
	(A55A#wdc*cmnet**)	Set 3G APN as cmnet User name and password is empty
STA	(A55A#sta) 或 (A55A#s)	-
STE	(A55A#ste) 或 (A55A#e)	-

### 3.4. SMS reply

When open the SMS reply function ,the router will receive the SMS command then reply the SMS ,the status is query the STA and STE no matter the SMS reply function is open or close.

after correctly receiving the STA and STE query command,the router will return the SMS which format is (A#B#C#D#E#...),the instruction is as shown in this table:

	field	Field analysis and meaning
STA status		sample: (bx000001#1# 112.65.247.181:5001#cmnet#1#V11090080)
	A	bx000001, device ID
	B	V11090080, firmware version code
	C	1, connect with the transfer server ; (0 is disconnect)
	D	112.65.247.181:5001, The transfer server IP(or domain name) and port ,empty if no setting
	E	cmnet, the APN of 3G network ,empty if no setting
	F	1, connect the 3G network; (0 is disconnect)
STE		sample: (10.35.77.84#192.168.1.1###4)

Extend status	A	10.35.77.84, WAN IP; (maybe not the public network IP ,depend on the network carrier)
	B	192.168.1.1, router LAN IP
	C	empty, 3G network dial user name is empty
	D	empty, 3G network dial password is empty
	E	4, 3G wireless network signal is strong (0: no signal, 1: weakest, 2: weaker, 3: normal, 4: stronger, 5: strongest)

### 3.5. Attentions

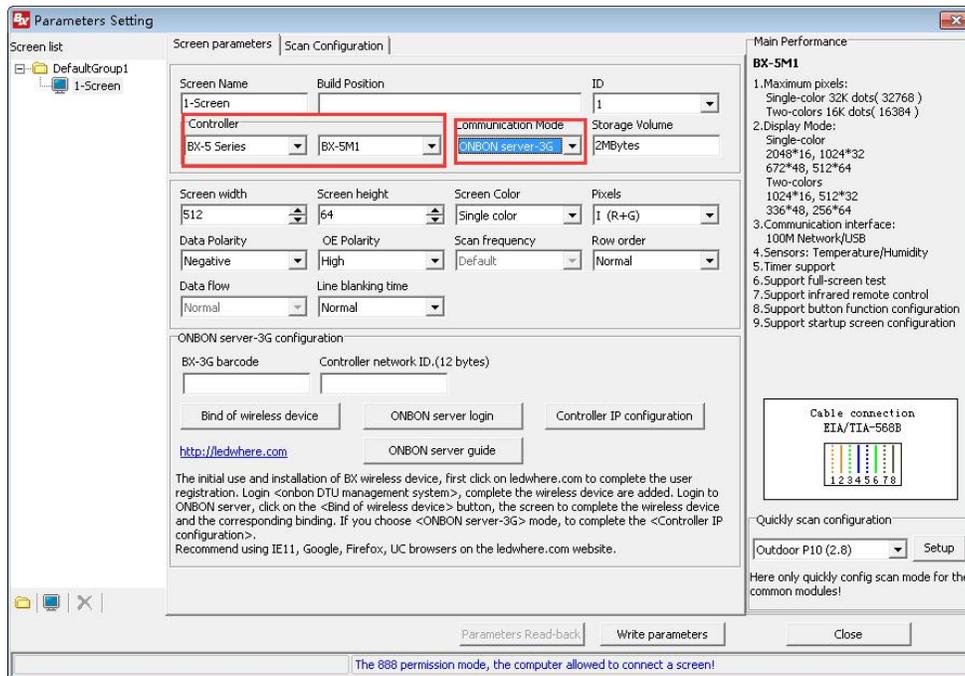
- ✧ 3G network operator have limitation to the SMS service for data business types of accounts, most of the data set is not contain SMS service, need to be further opened.if not opened SMS services, but use text query command and SMS reply function, could be automatically opened and produce tariffs, users will not surf the internet by arrears.
- ✧ SMS must be in English and half Angle, can't be character of the whole Angle, namely all SMS command character content must be in the status of Numbers or letters, can't input under the Chinese input method.
- ✧ The “(” “)” is also a part of the SMS format ,must input ,and no difference between the capital or small letters.
- ✧ SMS command can' t support the long SMS format
- ✧ The SMS command maximum character is 160
- ✧ In the SMS command parameter field,must add escape character” /” in front of the “\*” “#” “/”
- ✧ Group command is carried out by order.
- ✧ If exceed than 8 nos of command ,the extra will be cut
- ✧ Set the password as fixed 4 characters ,limit the number as 0-9 and 26 English letters.(need case sensitive)
- ✧ Before add any phone number ,allow any phone number to send SMS.but once add the phone number ,then only allow the added phone number to send SMS
- ✧ Maximum support 3 nos of phone number ,if more than 3 phone number ,continue to add ,the previous phone number will be replaced.

## 4. Software configuration samples

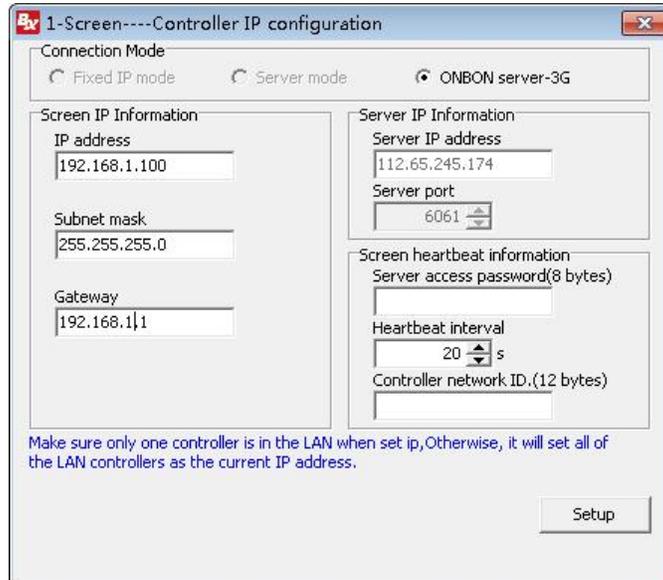
- ✧ this case need use the pop mapping to make virtual server computer ,operation details pls check “GPRS software configuration instructions”
- ✧ connect the controller with PC by single network cable and open the LEDSHOWTW software.
- ✧ Click setup--set screen parameters---password 888



- ✧ in the controller option select the correct controller model ,in the communication mode select the onbon server-3G



- ☆ click “controller IP configuration”, and set the “IP address” set the “IP address ” as public network fixed IP ,the “server port “ set according to the port mapping .click the setup button to finish the IP configuration.



- ☆ Click the “network server configuration” and click “obtain the local IP” make port mapping, finally click the “start server”



- ☆ Disconnect the controller and PC, connect to the 3G server and waiting for the controller online then upload program



## 5. FAQ

- ✧ PWR indicator light power off ,pls check the input power voltage and polarity.
- ✧ RJ45 port indicator light is off ,pls check the network cable is connect or not ,or change the network cable .
- ✧ SYS indicator light is heartbeat flashing ,GTM indicator light is normal light on ,it maybe not insert the UIM/SIM card correctly ,pls insert the UIM/SIM card then power on again .
- ✧ SYS indicator light is heartbeat flashing ,GTM indicator light is fast flashing for long time .main reasons: not connect with the antenna ,the weaker signal or SIM/UIM is arrearage.pls check antenna firstly ,can change antenna direction to check if the GTM indicator is flashing slowly or not .finally check the UIM/SIM fees .
- ✧ SYS indicator light is heartbeat flashing,GTM indicator light is off for long time .after restart many times ,nothing changed ,this situation ,controller need send back to factory for repair.
- ✧ SYS indicator light is on or off for long time ,after restart many times ,nothing changed ,this situation ,controller need send back to factory for repair.
- ✧ SYS and GTM light is flashing alternately ,if this situation ,controller need send back to factory for repair.