F3423 WCDMA/HSDPA/HSUPA ROUTER

USER MANUAL

Contents

Chapter 1 Brief Introduction of Product

1.1 General

F3423 WCDMA/HSDPA/HSUPA router is based on public WCDMA/HSDPA/HSUPA network, and it provides customers with high speed, "always online", transparent data transfer channel. It has been widely used on finance, electric power, environment protection and transportation fields and so on. It also supports APN to meet the need of customers.

1.2 Product Features

- ✧ Support VPN tunnel, including PPTP and L2TP+IPSEC
- ✧ Support wireless video monitoring and dynamic picture transfer
- ✧ Industrial ARM9 CPU，200M
- ✧ Support multi protocols , such as TCP/IP，UDP，ICMP，SMTP，HTTP，POP3，OICQ，TELNET，FTP ,SNMP ,etc.
- ✧ Support auto online keeping mechanism, including online detect, auto redial when offline to make router always online
- ✧ Support hardware and software WDT
- ✧ Support intellectual mode, enter into communication state automatically when powered
- ✧ Support several work modes
- ✧ Wide range power input（DC 5~35V）

- ✧ Convenient system configuration and maintenance interface（WEB or RS-232）
- ✧ Support multi OS, such as WINDOWS, LINUX, SCO UNIX etc.

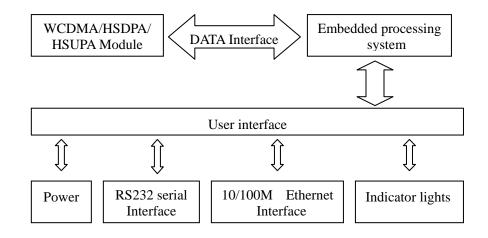## 1.3 System Component

The router is composed of the following parts mainly:
- ✧ Industrial ARM9 CPU，200M
- ✧ 16MB SDRAM & 4MB FLASH
- ✧ Industrial WCDMA/HSDPA/HSUPA module

1.4 Working Principle

The principle chart of the router is as following:

1.5 Technical Specification

Wireless specification:
- ✧ UMTS/WCDMA/HSDPA/HSUPA 850/900/1900/2100MHz
- ✧ Quad-band EGSM 850/900/1800/1900MHz
- ✧ GPRS/EDGE CLASS 12
- ✧ HSUPA: 5.76Mbps(UL) / HSDPA: 7.2Mbps(DL)/UMTS: 384kbps(DL/UL)
- ✧ EDGE: 236.8kbps(DL/UL)
- ✧ GPRS: 85.6Mbps(DL), 42.8Kbps(UL)

Interface:
- ✧ 10/100M Ethernet Port
- ✧ RS232 serial port, rates: 110~230400bits/s
- ✧ Indicator lights: "Power", "Online", "Alarm", "System", "Link/ACT"
- ✧ Antenna interface: standard SMA female interface, 50 ohm
- ✧ SIM/UIM interface: standard user card interface
- ✧ Power interface: standard 3-PIN power jack
- ✧ Reset button: restore the router to its original factory default settings

Power supply:
- ✧ Standard power: DC 12V/1.5A
- ✧ Power range: DC 5~35V

Others:
- ✧ Operation temperature:-25~+65℃
- ✧ Storage temperature: -40~+85℃
- ✧ Humidity: 95% (unfreezing)

Chapter 2 Installation Introduction
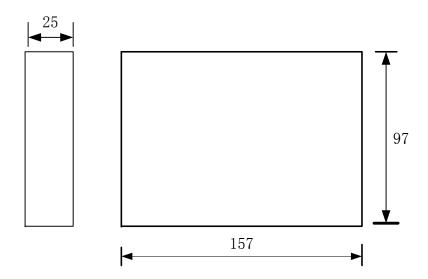
2.1 General

The router must be installed correctly to make it work properly.

Warning: Forbid to install the router when powered!

2.2 Encasement List

Name	Quantity	Remark
Router host	1	
Antenna	1	
Network cable	1	
Console cable	1	optional
Power adapter	1	
Manual CD	1	
Certification card	1	
Maintenance card	1	
Stator	2	optional

2.3 Installation and Cable Connection

Dimension: (unit: mm)

Installation of SIM/UIM card:

Firstly power off the router, and press the out button of the SIM/UIM card outlet with a needle object. Then the SIM/UIM card sheath will flick out at once. Put SIM/UIM card into the card sheath (Pay attention to put the side which has metal point outside), and insert card sheath back to the SIM/UIM card outlet.

Warning: Forbid to install SIM/UIM card when powered!

Installation of antenna:

Screw the SMA male pin of the antenna to the female SMA outlet of the router tightly. Warning: The antenna must be screwed tightly, or the signal quality of antenna will be influenced!

Installation of cable:

The router supports RS232 interface and 10/100M Ethernet interface. These two interfaces both adopt RJ45 outlet and distinguish by the sign on panel. The sign of the RS232 interface is "Console" and the sign of the 10/100M Ethernet interface is "ETH".

The router is equipped with a network direct cable and a console cable (optional).

Insert one end of network direct cable into RJ45 outlet with sign "ETH" of the router, and insert the other end into the Ethernet interface of user's device. The signal connection of network direct cable is as follows:

RJ45-1	RJ45-2
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8

Insert the RJ45 end of the console cable into the RJ45 outlet with sign "console" of the router, and insert the DB9F end of the console cable into the RS232 serial interface of user's device.

Warning: The network direct cable and the console cable mustn't be inserted

wrongly, or the router can't work properly.

The signal connection of the console cable is as follows:

RJ45	DB9F
1	8
2	6
3	2
4	1
5	5
6	3
7	4
8	7

The signal definition of the DB9F serial communication interface is as follows:

Pin	RS232 signal name	The direction for Router
1	DCD	output
2	RXD	output
3	TXD	input
4	DTR	input
5	GND	
6	DSR	output
7	RTS	input
8	CTS	output

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2.4 Power

The power range of the router is DC 5~35V.

Warning: When we use other power, we should make sure that the power can supply power above 6W.

We recommend user to use the standard DC 12V/1.5A power.

2.5 Indicator Lights Introduction

The router provides five indicator lights: "Power", "Online", "Alarm", "System", "Link/ACT".

Indicator Light	State	Introduction
Power	Bright	Router is powered on
	Dark	Router is powered off
Online	Bright	Router has logged on network
	Dark	Router hasn't logged on network
Alarm	Bright	SIM/UIM card does not work or the signal of the antenna is week
	Dark	Router has not alarm
Sysetm	Twinkle	System works properly
	Dark	System does not work
Link/ACT	Dark	The interface of Ethernet hasn't been connected
	Bright / Twinkle	The interface of Ethernet has been connected /Communicating

2.6 Reset Button Introduction

The router has a "Reset" button to restore it to its original factory default settings. When user press the "Reset" button, the router will restore to its original factory default settings and restart automatically.
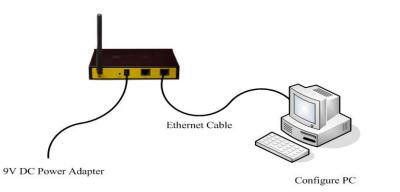
Chapter 3 Configuration and Management

This chapter describes how to configure and manage the router.

3.1 Configuration Connection

Before configuration, you should connect the router with your configuration PC with the supplied network cable. Plug the cable's one end into the LAN port (ETH) of the router, and another end into your configure PC's Ethernet port. The connection diagram is as following:

Please modify the IP address of PC as the same network segment address of the router, for instance, 192.168.1.9. Modify the mask code of PC as 255.255.255.0 and set the default gateway of PC as the router's IP address (192.168.1.2).

3.2 Access the Configuration Web Page

Start a web browser and type 192.168.1.2 in the Address (URL) field (The Default IP Address of the Ethernet port is 192.168.1.2). It will prompt a login page. The default username and password are both "admin". Please input the username and password login to access the configuration pages.

3.3 Configuration

3.3.1 Welcome

The "Welcome" page will give some contact information, if you have any question or problem, please contact us.

UserName: username used to login your ISP(Internet Service Provider)

Password: password used to login your ISP

Call Center: The dial number of your ISP

APN: The access point name of your ISP

Internet IP Address

3.3.2 WAN Settings

This page is used to configure the Internet access parameters.

WAN Wireless

Normally, The Internet IP Address of the router is allocated by the ISP automatically, you can also fix this address if the ISP agree.

Domain Name Server (DNS) Address

should also configure "Detection Interval", "Primary Detection Server IP" and "Backup Detection Server IP" items.

Route: Detect connection with route method, when choose this method, you should also configure "Detection Interval", "Primary Detection Server IP" and "Backup Detection Server IP" items.

PPP: Detect connection with PPP method, when choose this method, you should also configure "Detection Interval" item.
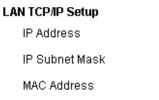
Detection Interval: The time interval between two detections, unit is second

Primary Detection Server IP: The server used to response the router's detection packet. This item is only valid for method "Ping" and "Route".

Backup Detection Server IP: The server used to response the router's detection packet. This item is valid for method "Ping" and "Route".

Note: When you choose the "Route" or "Ping" method, it's quite important to make sure that the "Primary Detection Server IP" and "Backup Detection Server IP" are usable and stable, because they have to response the detection packet frequently.

3.3.3 LAN Settings

IP Address: the LAN port IP Address.

Normally, the Domain Name Server (DNS) Address of the router is allocated by the ISP automatically. You can also use your own DNS address. If you want to use your own DNS, please make sure the DNS address you configured is usable and stable.

Keep Online Detection

This function is used to detect whether the Internet connection is active, if you set it and when the router detect the connection is inactive ,it will redial to you ISP immediately to make the connection active.

Detection Method:

None: do not set this function

Ping: Send ping packet to detect the connection, when choose this method, you

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Note: If you change the LAN IP Address, you have to reboot the router to make it valid.

IP Subnet Mask: the LAN port subnet mask.

MAC Address: the LAN port Ethernet MAC Address

Use Router as DHCP Server: Enable or disable the router work as a DHCP server.
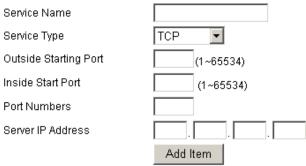
Starting IP Address: The starting IP Address of the DHCP server's Address pool
Ending IP Address: The ending IP Address of the DHCP server's Address pool

3.3.4 NAT

The router causes your entire local network to appear as a single machine to the Internet, You can make a local server visible and available to the Internet, This is done using the NAT (Network Address Translation). The NAT configuration page is as following:

Add a NAT item

Service Name: This NAT item's name
Service Type: The protocol type of the target packet
Outside Starting Port: The target packet's destination port
Inside Start Port: The destination port of packet which has been processed by the NAT module.
Port Numbers: Port numbers which will be processed by the router.
Server IP Address: Local server IP Address.

Example:
Configure an item as following

Add NAT Items

Service Name	my_nat1
Service Type	TCP
Outside Starting Port	5001 (1~65534)
Inside Start Port	5001 (1~65534)
Port Numbers	3
Server IP Address	192 . 168 . 1 . 249

Add Item

Once adding it, The custom NAT items table will displays this item

Custom NAT Items

Choose	#	Service Name	Outside Start Port	Inside Start Port	Port Numbers	Server IP Address	Protocol
○	1	my_nat1	5001	5001	3	192.168.1.249	TCP

Delete Item

This item will make the router process packet with the destination port from 5001 ~ 5003 (total 3 port numbers), after processed by the NAT module, the destination port will be 5001~ 5003 correspondingly and the packet will be sent to host 192.168.1.249.

Delete a NAT item

To delete a NAT item, you should choose this item and press "Delete Item" button.

3.3.5 DMZ

Incoming traffic from the Internet is normally discarded by the router unless the traffic is a response to one of your local computers or a service that you have configured in the NAT page. Instead of discarding traffic for services you have not defined, you can have it forwarded to one computer on your network. This computer is called the Default DMZ Server.

Enable DMZ	○ Enable ⦿ Disable
DMZ IP	192 . 168 . 1 . 9

Enable DMZ: Enable or disable DMZ function.
DMZ IP: DMZ server IP Address.

3.3.6 Filter

To block some packets getting Internet access or block some Internet packets getting local network access, you can configure filter items to block these packets.

Packet Filter
 Packet filter function is realized based on IP address or port of packets.

Enable Packet Filter	○ Enable ⦿ Disable
Policy	Discard The Following

Apply

Enable Packet Filter: Enable or disable "packet filter" function
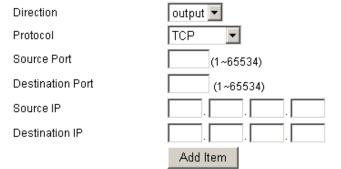Policy: The filter rule's policy, you can choose the following options

Discard The Following--Discard all packets matched the custom filter rules, Accept all other packets

Only Accept The Following--Accept all packets matched the custom filter rules, Discard all other packets

Add Filter Item

Direction
    input: packet from WAN to LAN
    output: packet from LAN to WAN

Protocol: packet protocol type

Source Port: packet's source port

Destination Port: packet's destination port

Source IP: packet's source IP address

Destination IP: packet's destination IP address

Note:
 "Source Port" ,"Destination Port" ,"Source IP" ,"Destination IP" could not be all empty ,you have to input at least one of these four parameters.

Example:
   If want to block local network PC 192.168.1.249 telnet(TCP port 23) to any other Internet Address ,the filter item could be configured as following:

The following is the configured filter item:

Choose	#	Source IP	Source Port	Destination IP	Destination Port	Direction	Protocol
○	1	192.168.1.249	*	*	23	output	TCP

Delete Item

MAC Restrict

This filter function is based on the Ethernet MAC address.

Enable MAC Restrict: Enable or disable MAC Restrict function

Policy:

Discard The Following -- Discard all packets matched the custom MAC Restrict rules, Accept all other packets

Only Accept The Following -- Accept all packets matched the custom MAC Restrict rules, Discard all other packets

MAC Address: The MAC Address applied to this MAC Restrict item.

3.3.7 Static Routes

Static Routes provide additional routing information to your router. Under normal circumstances, the router has adequate routing information after it has been configured for Internet access, and you do not need to configure additional static routes. You must configure static routes only for unusual cases such as configured VPN tunnel or multiple IP subnets located on your local network.

Static Routes

#	Name	Destination	Mask	Gateway

Add   Delete

Press "Add" button to start add a custom static route:

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Static Routes

Route Name	
Destination IP Address	. . .
IP Subnet Mask	. . .
Gateway IP Address	. . .
Metric	3

Apply Cancel

Route Name: This static route's name, It is for identification purpose only

Destination IP Address: The packet's destination IP Address

IP Subnet Mask: The subnet mask for this destination, If the destination is a single host, please input 255.255.255.255

Gateway IP Address: The gateway IP Address of this packet.

Metric: A number between 1 and 15, It represents the number of routers between your network and the destination. Usually, a setting of 2 or 3 works

　If you want to delete one custom static route, choose this item and press "Delete" button.

3.3.8 Router Status

This page displays the router's status information.

System

Account Name	admin
Firmware Version	V-1.0:2008-10-31 12:12:00
Module Type	SIEMENS MODULE

Account Name: The username to login the router.

Firmware Version: Software version information

Module Type: The wireless module used to get the Internet access

Internet Port

Status	online
IP Address	10.95.208.253
Gateway	10.64.64.64
Domain Name Server	211.138.151.161
	211.136.18.171

Status: the current Internet access status

　　At State --- System is initialize the module

　　Dialing --- System is dialing to ISP

　　Online --- System has got Internet access

IP Address: The local Internet IP Address

Gateway: The ISP gateway IP Address

Domain Name Server: The Domain Name Server (DNS) IP Address.

LAN Port

IP Address	192.168.1.2
DHCP	Enable
IP Subnet Mask	255.255.255.0

IP Address: the LAN port IP Address

DHCP: the DHCP server status

IP Subnet Mask: The LAN port subnet mask

PPTP Client

Status	Disable
Interface	
Local Tunnel IP	
Remote Tunnel IP	

Status: current PPTP client status.

Interface: The interface name of the PPTP tunnel when the tunnel is up.

Local Tunnel IP: The local tunnel IP Address when the tunnel is up.

Remote Tunnel IP: the PPTP server's tunnel IP Address when the tunnel is up.

L2TP Client

Status	Disable
Interface	
Local Tunnel IP	
Remote Tunnel IP	

Status: current L2TP client status.

Interface: The interface name of the L2TP tunnel when the tunnel is up.

Local Tunnel IP: The local tunnel IP Address when the tunnel is up.

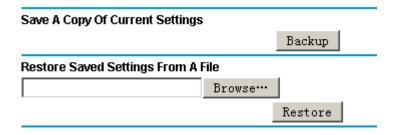Remote Tunnel IP: the L2TP server's (LNS) tunnel IP Address when the tunnel is up.

3.3.9 Backup Settings

This function can save the router's current configuration to a file. You can restore the configuration with the file later.

Note:

Please do not edit the saved file.If the file used to restore configuration is not correct, the router will restore to factory default setting.

Backup Settings

Save A Copy Of Current Settings

Backup

Restore Saved Settings From A File

Browse...

Restore

To save your configuration, click the "Backup" button, your browser will extract the configuration file from the router and will prompt you for a location on your computer to store the file. The default file name is "router-config.txt". You can also give the file a more meaningful name.

To restore your configuration from a saved file, enter the full path to the file on your computer or click the "Browse" button to browse to the file. When you have located it, click the "Restore" button to send the file to the router to restore configuration.

3.3.10 Load Default

Load Default

Load Factory Default Settings

Load Default

It is sometimes desirable to restore the router to the factory default settings. This can be done by using the "Load Default" function, which will restore all factory settings.

To load default settings, please click the "Load Default" button. A prompt page will give you a choice to give up this operation or continue. Click "YES" button to load default and "No" to give up.

Load Default

Loading the Factory Default Settings will erase all the current settings.

Are you sure you want to do this?

Yes No

3.3.11 Set Password

The default username and password are both "admin".

To change the username and password, type the new username, old password and new password.

Set Password

User Name	admin
Old Password	
New Password	
Repeat New Password	

Apply Cancel

3.3.12 Logs

This function is used to debug the software, when there is some problem with the router, you can get the log information and send it to us to diagnose the problem. Normally this function should be disabled.

Logs

Enable Log ○ Enable ⦿ Disable
Log Way ○ Web ⦿ Console ○ Syslog 192 . 168 . 1 . 9
Apply

Refresh Clear Log Save Log

```
30--->
80 21 01 04 00 1c 03 06 00 00 00 00 02 06 00
0f 01 81 06 00 00 00 00 83 06 00 00 00 00
30--->
80 21 01 04 00 1c 03 06 00 00 00 00 02 06 00
0f 01 81 06 00 00 00 00 83 06 00 00 00 00
30--->
80 21 01 04 00 1c 03 06 00 00 00 00 02 06 00
0f 01 81 06 00 00 00 00 83 06 00 00 00 00
30--->
80 21 01 04 00 1c 03 06 00 00 00 00 02 06 00
0f 01 81 06 00 00 00 00 83 06 00 00 00 00
30--->
80 21 01 04 00 1c 03 06 00 00 00 00 02 06 00
0f 01 81 06 00 00 00 00 83 06 00 00 00 00
```

Refresh Clear Log Save Log

Enable Log: Enable or disable this function

Log Way: there are three log ways

Web:

Enable Log ⦿ Enable ○ Disable
Log Way ⦿ Web ○ Console ○ Syslog 192 . 168 . 1 . 9
Apply

   The log message is displayed on this web page. You can save the log message to a file by click "Save Log" button.

Console:

Enable Log ⦿ Enable ○ Disable
Log Way ○ Web ⦿ Console ○ Syslog 192 . 168 . 1 . 9
Apply

   The log message is output to the console port.

   To use this way, you should connect the router's console port and your PC's serial port with the supplied console cable. Then open hyper terminal with the following serial port settings:

   Baud :   115200 bps

Databit: 8
Parity :   None
Stopbit: 1
Flow control: None

When you configure the serial port settings , press "call" button ,The router log message will be displayed.

You can capture the log message into a file:
From the menu, choose "Transfer" →"capture text"

Input the log file name and press "start" button, the output message are now stored in the log file.

When enough message captured, you can stop capturing:
From the menu, choose "Transfer"→"capture text"→"stop"

Syslog:

The log message is output to a syslog server, if choose this way, you should input a syslog server's IP Address and run a syslog server program on it. .

3.3.13 Misc

Normally, the four-faith web config tool listens on port 80. If you want to change listening port, please configure "web config port" item.

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Web Config Port　　　80

Apply

To reboot the router , press the "Reboot" button.

Reboot System　　　Reboot

3.3.14 PPTP Client

PPTP Client

☑ **Enable PPTP Client**
PPTP Server IP　　222 . 33 . 9 . 43
Local Tunnel IP　　◉ Auto ○ Fixed IP ___ . ___ . ___ . ___
User Name　　　　test
Password　　　　●●●●

Apply　Cancel

Enable PPTP Client: Enable or disable PPTP Client function
PPTP Server IP:　　The PPTP server's IP Address
Local Tunnel IP:　　The local tunnel IP Address, if you choose "Auto", the Address is allocated by the PPTP Server dynamically. You can also use the fixed local tunnel IP if the PPTP Server support
User Name: Username to login the PPTP Server.

Password: Password to log into the PPTP Server.

3.3.15 L2TP Client

L2TP Client

☑ **Enable L2TP Client**
L2TP Server IP (LNS)　222 . 33 . 9 . 43
Local Tunnel IP　　◉ Auto ○ Fixed IP ___ . ___ . ___ . ___
User Name　　　　test
Password　　　　●●●●

Apply　Cancel

Enable L2TP Client: Enable or disable L2TP Client function
L2TP Server IP (LNS):　　The L2TP server's IP Address
Local Tunnel IP:　　The local tunnel IP Address, if you choose "Auto", the Address is allocated by the L2TP Server dynamically. You can also use the fixed local tunnel IP if the L2TP Server support
User Name: Username to login the L2TP Server.
Password: Password to login the L2TP Server.
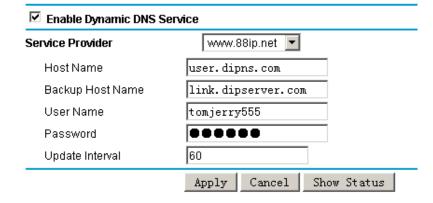
3.3.16 Dynamic DNS

If your network has a permanently assigned IP address, you can register a domain name and have that name linked with your IP address by public Domain Name Servers (DNS). However, if your Internet account uses a dynamically assigned IP address, you will not know in advance what your IP address will be, and the address can change frequently. In this case, you can use a commercial dynamic DNS service, which will allow you to register your domain to their IP address, and will forward traffic directed at your domain to your frequently-changing IP address.

The four-faith router currently support 88ip(www.88ip.net) and 3322(www.3322.org) Dynamic DNS provider.

88ip:

Dynamic DNS

☑ **Enable Dynamic DNS Service**

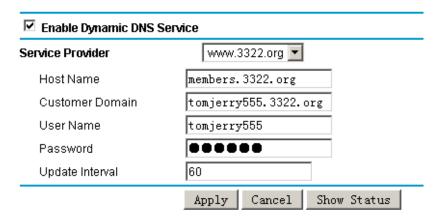| Service Provider	www.88ip.net
Host Name	user.dipns.com
Backup Host Name	link.dipserver.com
User Name	tomjerry555
Password	●●●●●●
Update Interval	60

[Apply] [Cancel] [Show Status]

Enable Dynamic DNS Service: Enable DDNS service

Service Provider: the DDNS service provider

Host Name: The 88ip provider's server hostname

Backup Host Name: The 88ip provider's backup server hostname

User Name: Your 88ip account username

Password: Your 88ip account password

Update Interval: The time interval of IP Address update, unit is second

3322:

Dynamic DNS

☑ **Enable Dynamic DNS Service**

Service Provider	www.3322.org
Host Name	members.3322.org
Customer Domain	tomjerry555.3322.org
User Name	tomjerry555
Password	●●●●●●
Update Interval	60

[Apply] [Cancel] [Show Status]

Enable Dynamic DNS Service: Enable DDNS service

Service Provider: the DDNS service provider

Host Name: The 3322 provider's server hostname

Customer Domain: Your custom 3322 domain name.

User Name: Your 3322 account username

Password: Your 3322 account password

Update Interval: The time interval of IP Address update.

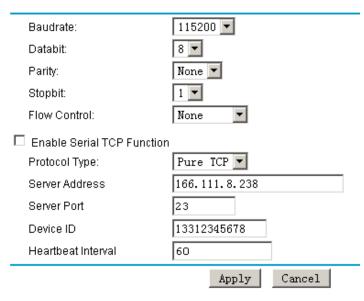The "Show Status" button is used to display the current DDNS status.

The above DDNS status page shows the domain name tomjerry555.3322.org now point to IP Address 10.95.207.236

3.3.17 Serial Settings

There is a console port on Four-Faith router. Normally, this port is used to debug the router. This port can also be used as a serial port. The router has embedded a serial to TCP program. The data sent to the serial port is encapsulated by TCP/IP protocol stack and then is sent to the destination server. This function can work as a Four-Faith DTU (Data Terminal Unit). Please refer www.four-faith.com   for more information about this product.

Baudrate: The serial port's baudrate

Databit: The serial port's databit

Parity: The serial port's parity

Stopbit: The serial port's stopbit

Flow Control: The serial port's flow control type.

Enable Serial TCP Function: Enable the serial to TCP function

Protocol Type: The protocol type to transmit data.

UDP(DTU) – Data transmit with UDP protocol , work as a Four-Faith DTU which
has application protocol and hear beat mechanism.

Pure UDP – Data transmit with standard UDP protocol.

TCP(DTU) -- Data transmit with TCP protocol , work as a Four-Faith DTU which
has application protocol and hear beat mechanism.

Pure TCP -- Data transmit with standard TCP protocol.

Server Address: The data service center's IP Address or domain name.

Server Port: The data service center's listening port.

Device ID: The router's identity number.

Heartbeat Interval: The time interval to send heart beat packet. This item is valid only
when you choose UDP(DTU) or TCP(DTU)   protocol type.