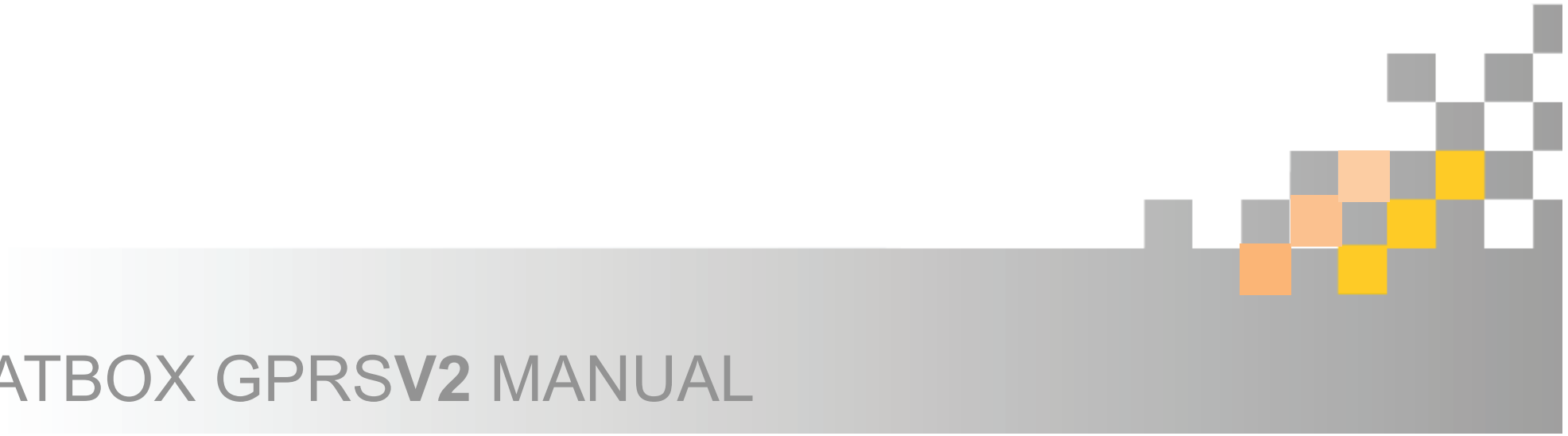
AMPLIFIED ENGINEERING



FATBOX GPRS**V2** MANUAL

VERSION 2.1

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Bentley, Western Australia 6102
AUSTRALIA

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COLOR LEGEND

This manual is color-coded for your ease of reference.

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critical!

AMPLIFIED ENGINEERING

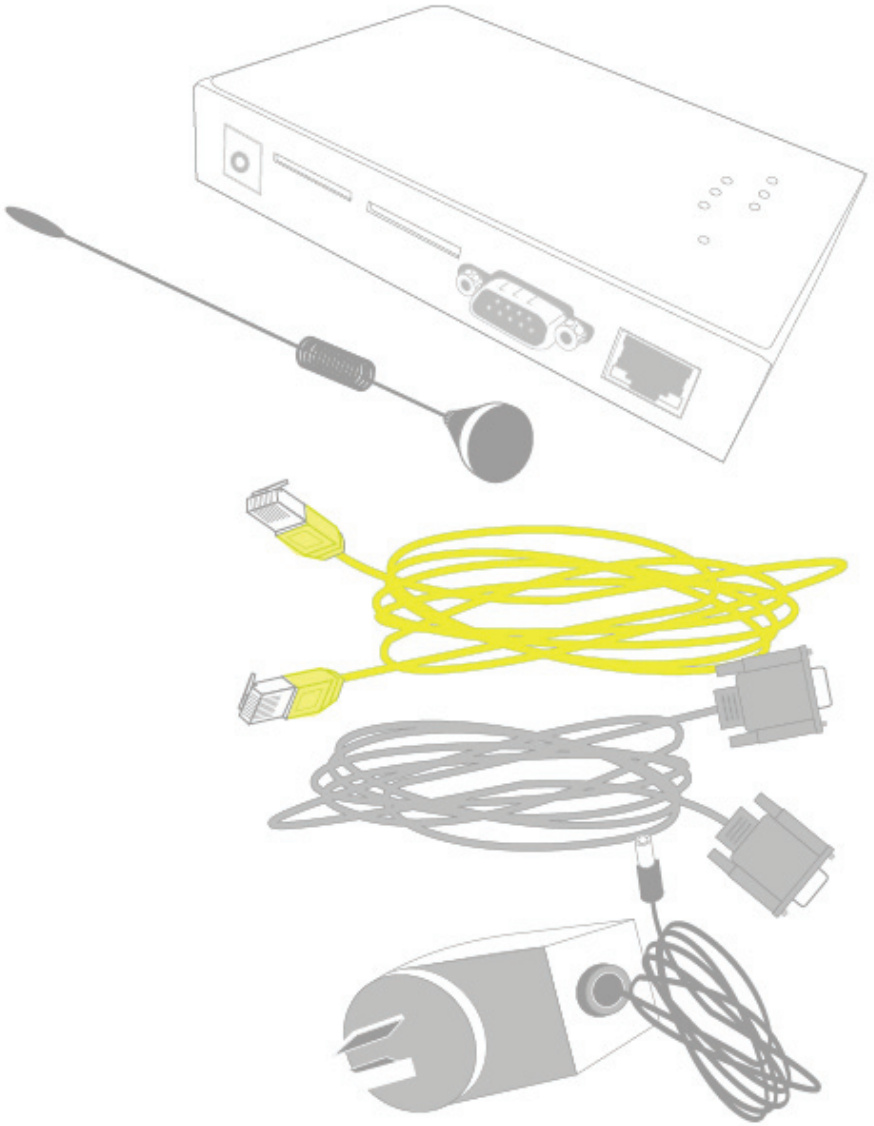
Delivering Optimized Wireless Solutions is our motto.

If you have any help requirements, please do not hesitate to contact our Solution Partners or the FATBOX Head Office ;)

CONTACT DETAILS ON PAGE 42.

Please download latest user manuals at www.amplified.com.au

Thank you for purchasing the FATBOX GPRSV2 cellular router. Inside your FATBOX packaging, you will find:



- 1 X FATBOX™ GPRSV2 Router
- 1 X Tuned GSM antenna (with 2M wire) to SMA Connector
- 1 X Yellow CAT5 LAN cable
- 1 X Serial diagnostics cable
- 1 X regulated power supply unit (100-240VAC 50/60 Hz to 12VDC 1 Amp)

▷ IMPORTANT SAFETY NOTICE

All specialist electronic devices must be operated with due care to avoid damage or injuries and should be installed and operated by a trained personnel.

DO NOT OPERATE THIS EQUIPMENT IN ENVIRONMENTS CONTAINING POTENTIALLY EXPLOSIVE GASES OR LIQUIDS, EXAMPLE, GAS STATIONS AND CHEMICAL PLANTS AND EXPLOSIVE STORES.

1. PRODUCT SPECIFICATIONS

The FATBOX GPRSV2 model CRGV2 integrates a robust Motorola G24 series module and a powerful ARM7 processor.
Its rugged industrial design is fit for demanding remote and mobile data connectivity applications.

Wireless Cellular Interface

- GPRS Class 10 for maximum 85.6kbps downlink
- Quad Band GSM 850/900/1800/1900
- SMS and CSD 14.4kbps supported
- Dual SIM with PPP connection failure auto-switching with SIM1 priority mode
- Motorola G24 Wireless module integrated
- SIM PIN for SIM card security
- Reboot on SIM Failure

LAN Interface

- 10/100BaseT Ethernet port
- DHCP server on default

RS232 Serial Interface

- To operate as serial modem (e.g. for SMS, CSD)
- For TCP/UDP transparent transport mode
- As a back-up route (e.g. a PSTN modem)

Power and Operating Conditions

- Power: 5 – 30VDC (200mA~150mA @12VDC)
- Operating Temperature: -10°C to +65°C
- Physical dimensions: 130mm x 92mm x 25mm
- Weight: 420gm

Operating System

- LINUX OS on ARM7 microprocessor
- Kernel and Firmware update over LAN or Serial

Other Features

- Wake on LAN/Serial data
- Wake on Incoming call
- Connect on Serial burst detected
- SSHv2 for secure remote management
- SNMPv1 for Network Management Systems
- Supports VPN [IPSEC (PSK), PPTP and L2TP]
- DDNS
- DMZ & NAT
- IP Firewall
- CHAP and/or PAP authentication
- Configurable PPP keep alive function
- Configurable ON/OFF Timer
- Backup route using serial to external modem

In the Box

- FATBOX GPRSV2 Router
- GSM antenna (with 2 meter wire to SMA Connector)
- CAT5 LAN cable
- RS232 Serial cable
- Regulated power supply unit (100-240VAC, 50/60Hz to 12VDC 1 Amp)

2.1 Power Supply Details

The power requirements for the FATBOX GPRSV2 are as follows:

Supply	5 – 30VDC regulated power supply recommended (e.g. 12VDC @ 1A)
Consumption	100 ~ 150mA @ 12 VDC (Cellular network not connected) 200 ~ 250mA @ 12VDC (Cellular network connected and transmitting)

- ▷ Inadequate current or dips in voltage may cause the device to fail to connect to data services even if the LEDs are lighted up.
- ▷ Supply over 30 VDC will damage the device.

2.2 Cellular Data Network Provider

The FATBOX GPRSV2 operates in any GSM network (850/900/1800/1900) and provides data connection via GPRS MS Class 10.

- ▷ Please ensure that the SIM card to be used has PIN disable and GPRS data plans enabled. You will need to check with your Network Operator for configuration information like APN, dial-number, username and password.

2.3 Ethernet Devices

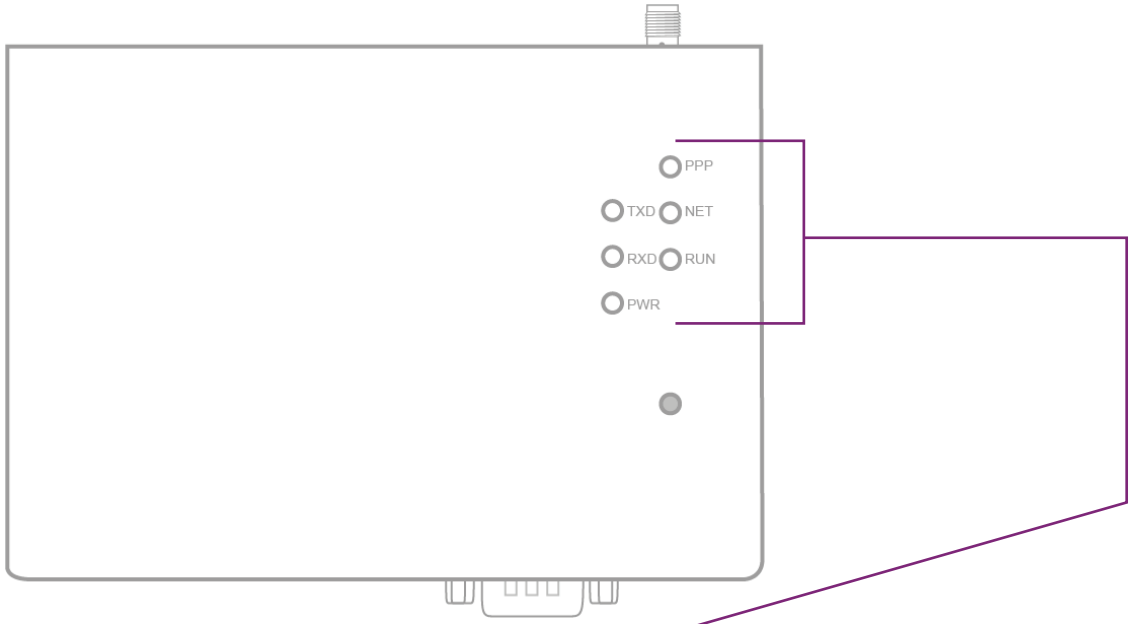
In the factory default, the FATBOX is configured as a Gateway with an IP address of 192.168.1.1 and a Subnet of 255.255.255.0.

You can either let the inbuilt DHCP server assign IP addresses to connected devices automatically (by default) or configure the attached hosts with fixed IP addresses. See Section 7.1.3 on page 20 for more information on how to do this.

2.4 Serial Devices

In the factory default, the FATBOX's serial port is designated as a serial terminal console that continuously sends a debug log. This helps to ease device troubleshooting.

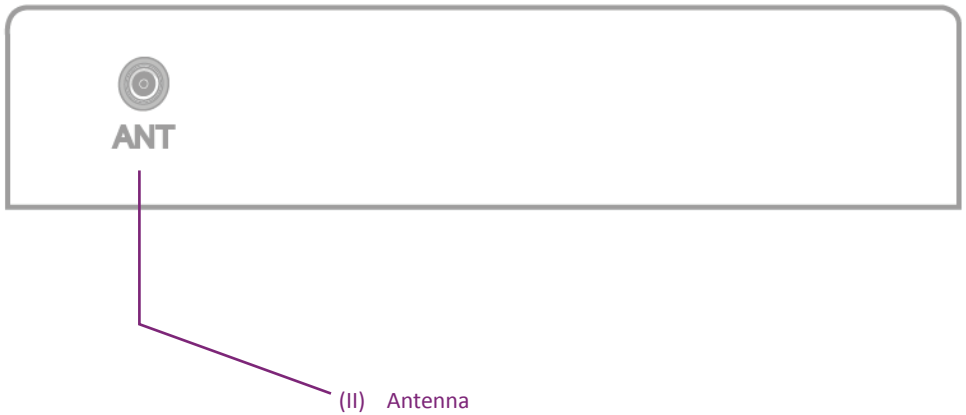
But the serial port can also be configured to function as a serial modem, back up route or a TCP/UDP transparent transport channel. See section 7.1.4 on page 21 for information on how to do this.



(I) LED Indicators

The FATBOX GPRSV2's LEDs are useful indicators of the unit's current operating status and should be used for initial setup and troubleshooting of the router.

LED	Indication of	LED Status	Router Status
PWR	Power Supply	LED ON	Power is supplied to router
RUN	Operation	Blinking at 1Hz	Operating Fine
NET	Ethernet Connection	Steady GREEN	Successful GSM Network Connection
		No Light/Slow Blink	Unsuccessful GSM Network Connection
PPP	PPP Connection	Steady GREEN	Successful PPP Connection
RX/TX	Serial Activity	Lighted	Indicates Serial Port RX and TX activity



(II) Antenna

The supported antenna is a 50Ω SMA Male. This antenna must be designed for the network frequency that the device is operating in.

For areas with weak signals, a high gain antenna (e.g. 6dBi) may be used.
Please contact support@amplified.com.au or a reseller partner if you need to purchase a specialized antenna such as a high gain or outdoor antenna.

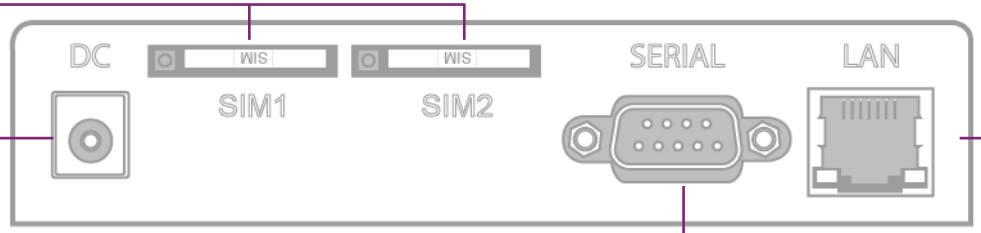
Note: The performances of the device is very much affected by the signal strength of the network operator.

(IV) SIM Card (or USIM)

The SIM card to be used is the 'mini' USIM type of ISO/IEC 7810:2003, ID-000 standard, i.e. 25 X 15mm. Push gently the yellow button to eject SIM carrier. SIM card should be inserted into the carrier as indicated.

The FATBOX GPRSV2 supports DUAL SIM for redundancy in critical applications. You will need 2 data SIMs from different operators - the router will switch from one SIM to the other upon failure to reconnect to the GPRS service. The number of retires and the wait period for each retry can be user configured. See Section 7.1.5 - Timer Configure on page 22 to do this.

▷ NEVER remove or insert SIM card when device has PWR switched in "ON" position. Damage caused to device or SIM in such case will not be warranted.



(III) Power Source (DC)

If you are providing your own power source, please ensure it adheres to the following specifications:

Power Connector:

Female 5.5mm X 2.1mm plug is required

(+VE TIP)

A 12VDC with 1A rated regulated power supply is recommended for maximum power efficiency.

(V) Serial Ports (SERIAL)

The serial port is useful for the manipulations of FATBOX units remotely. The port may also be used as a serial modem, the configuration to set the FATBOX as a serial modem is on page 21, section 7.1.4.

(VI) Ethernet Ports

The FATBOX has a 10/100BaseT Ethernet port. Use high quality (or the included) CAT5 straight cable to connect your Ethernet device to your FATBOX.

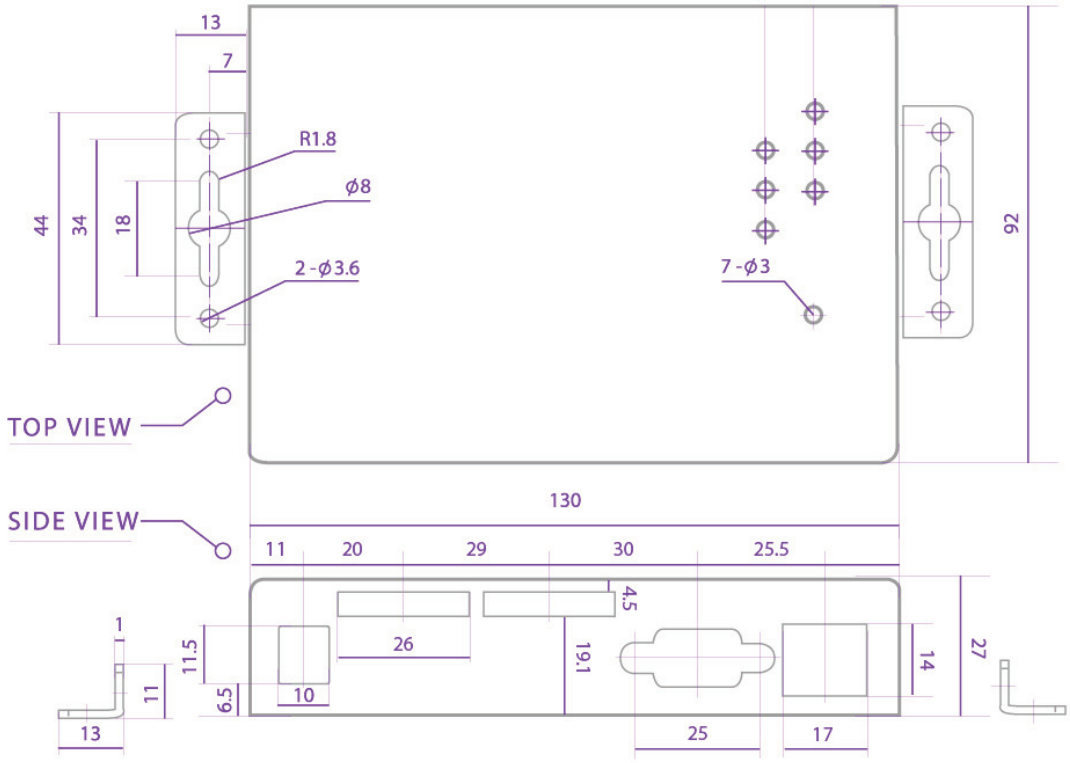
Note: The maximum Ethernet cable length is 100 meters.

The case of the FATBOX is made with sheet steel that provides sturdy protection for the electronics and serves as an EMR Shield at the same time. The removable “L” mounting plates should be used to mount the router to a secure structure or a mounting plate within an electronic enclosure.

∴ Installation Orientation: For most efficient cooling, the router should be mounted vertically with the antenna-side facing up to allow for natural convection.

∴ Antennas must be mounted external of any shielded metal enclosure and secured to a large metal plane for best performance. A good example is the middle of a vehicle’s metal roof.

∴ Vibration – in conditions where strong vibrations are expected (for example in locomotives) the FATBOX should be mounted with a vibration dampening material in between the box and the mounting surface. This isolation helps to dampen the transmission of shocks that may otherwise damage the device over time.

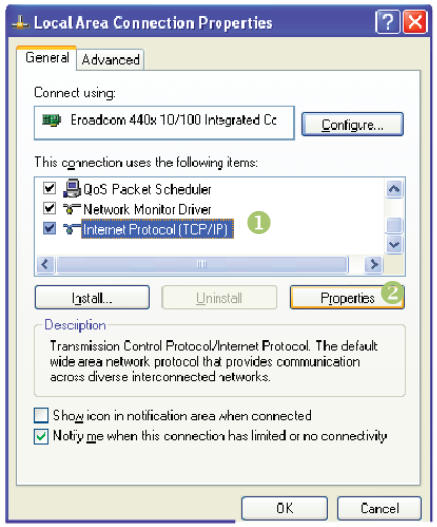


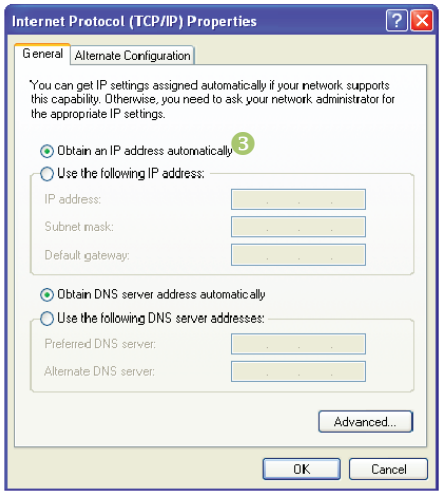
5.1 Ethernet Device Settings

5.1.1 Using the DHCP to deploy addresses automatically

The FATBOX's DHCP server is enabled by default and its IP address is **192.168.1.1**

For your initial setup, we suggest setting your computer's LAN Internet Protocol (TCP/IP) to automatic. Do this by going to: *Control Panel> Network and Sharing Center> LAN Configure> TCP/IP (IPv4)* ❶ *Properties* ❷*> Obtain IP address automatically* ❸.





5.1.2 Setting host addresses manually

Alternatively, you may choose to manually configure your device so it has a fixed local IP address. Input the IP address following this format.

IP address	· **192.168.1.XXX**[1]
Subnet Mask	*Usually automatically set to **255.255.255.0***
Default Gateway	· **192.168.1.1**
Preferred and Alternate DNS Server	*Obtain DNS server addresses automatically or Choose your own DNS Servers*

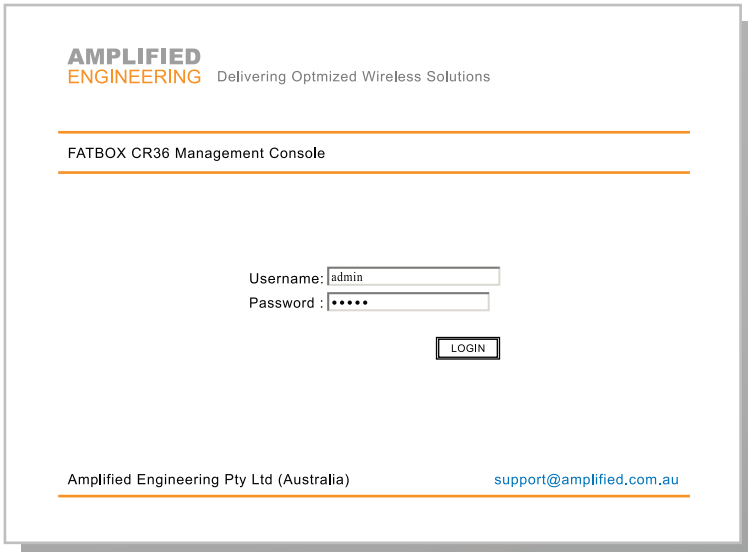
1. The host ID XXX should be a number between 2 to 254 and should not be duplicated within the same local network.

5.2 Serial Device Settings

If you are connecting a serial device to the FATBOX for Serial Log Monitoring, Serial DTU (Transparent Transport) or Serial Modem, you will need to set the device's serial port to the following setting to initiate a connection.

Baud Rate	**115200** bps
Data Bits	**8** Data Bits
Stop Bits	**1** Stop Bit
Parity Check	**No** Parity Bit (None)
Flow Control	**No** Flow Control (None)

6.1 Logging in to the FATBOX GPRSV2



Connect your computer to port LAN on the FATBOX with the Ethernet CAT5 cable provided. Wait a few moments for your computer to register the device then open your web browser and type in "192.168.1.1" into the URL tab.

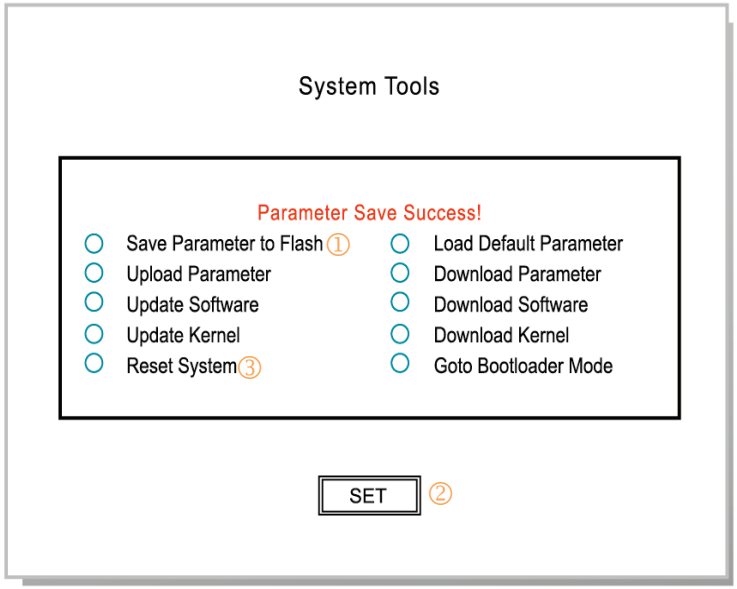
Enter as following in the LOGIN page:

USERNAME: admin
PASSWORD: 12345

You may change the username and password from within the console.

The DHCP server is activated by default. It will assign a local IP address of 192.168.1.2.

6.2 Saving Parameter Changes



After the making changes to your FATBOX's configuration, you have to go to *System Manage* > *System Tools* and Save the parameter changes to Flash and RESET as following.

Choose "Save Parameters to Flash" ① and click on SET ②.

Then you may reset the system by choosing "Reset System" ③ and then click "SET" ②. Alternatively you may choose to reset by unplugging the power cord for a few seconds. The new settings will be in place when the B.A.S.E reboots.

▷ IMPORTANT: Please wait till the message "Parameters Save Success" is displayed before resetting the FATBOX. A premature reset may corrupt the unit's configuration. If this happens you will need to use the serial console to load the default settings to the box. (See section 9.3 on page 40 to do this.)

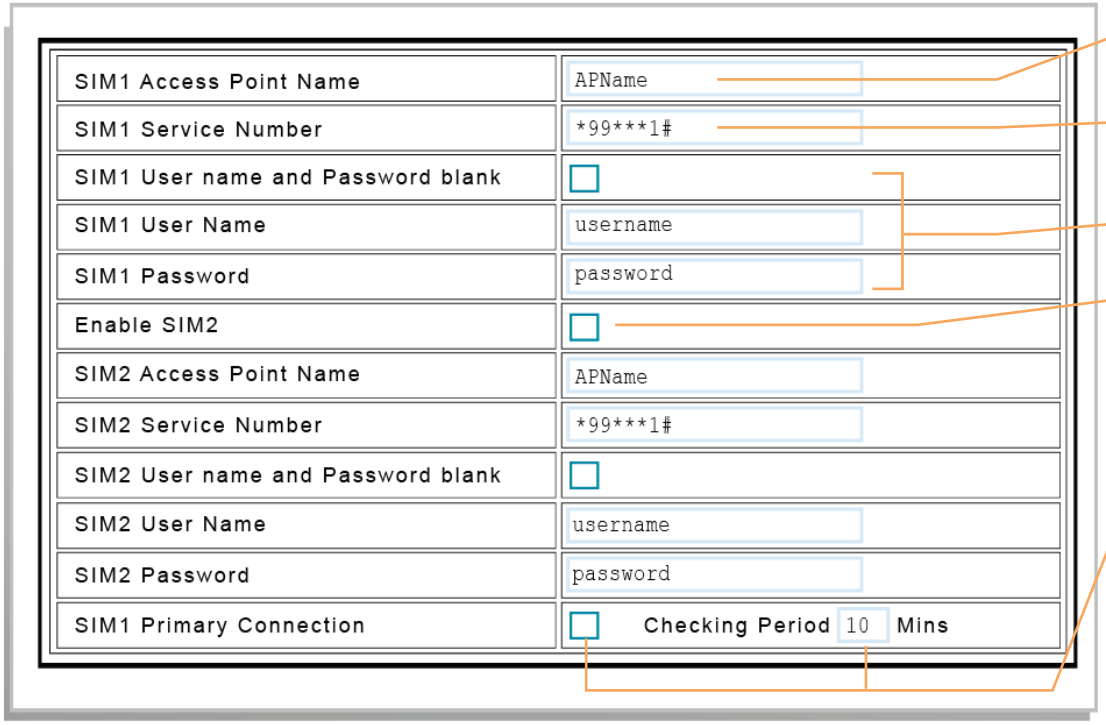
Welcome to the FATBOX Web-Console menu. If you are already logged in, the following segment will run you through the various settings and configurations you can make through your web browser. Please ensure that you have covered segment 6.2 on saving parameter changes before you continue. The web console is recommended for users who prefer having an intuitive interface to manage their routers.

7.1 System Parameters

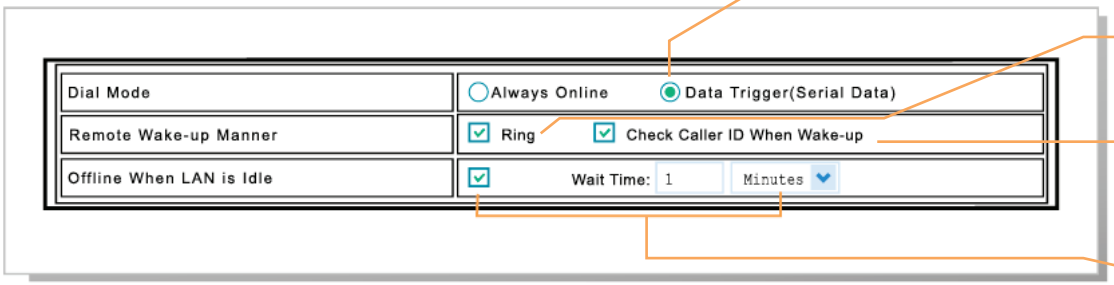
The FATBOX GPRSV2 is smartly designed so that a single product may be deployed in a variety of ways around your network in a cost effective manner. Section 7.1 covers how to set up the unit to the way that you'll like to use it.

7.1.1 Services Configuration

To begin connecting to a cellular data network you will need to set up the Services Configuration menu found in System Parameters. Note that much of the information required here would have to come from your cellular operator.



If you want the FATBOX to be always on operation click the “SET” button to confirm the settings now. Otherwise continue to configure the following section.



Check Data Trigger if you want the FATBOX to **only** go online when there is incoming serial data or if it receives a *Wake Up* call.

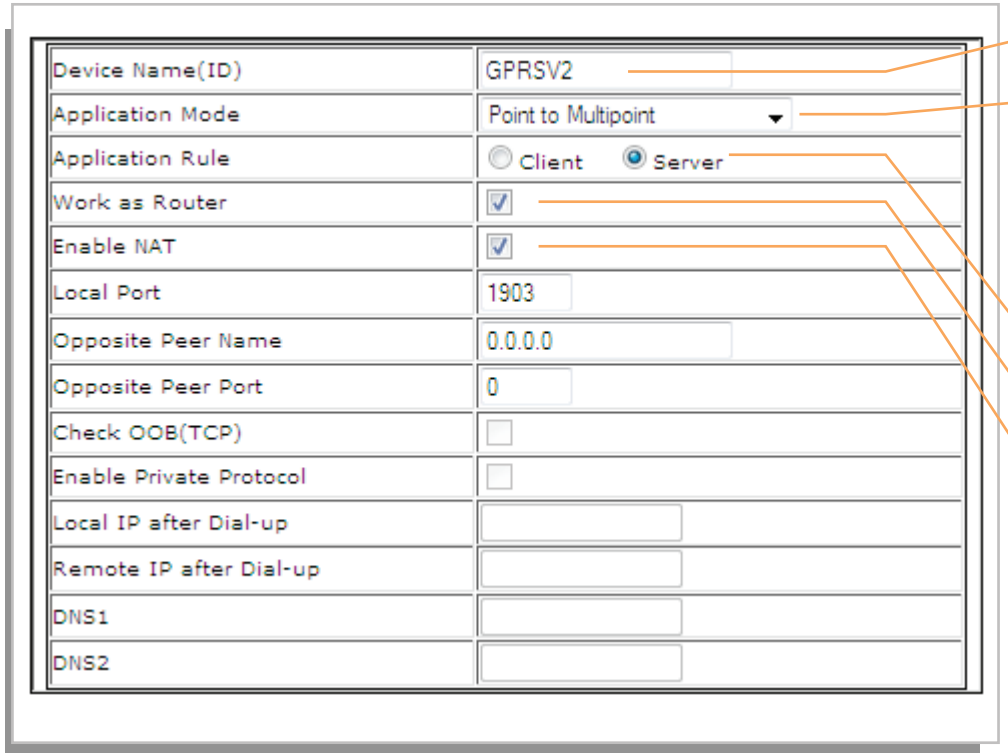
Check “RING” to allow incoming call to *Wake Up* unit for PPP reconnection.

Check “CALLER ID WHEN WAKE ” if you want authentication against the caller’s number (Set in Section 7.1.8 - Advanced Parameters)

Check to disconnect PPP and *Sleep* when the Ethernet port is idle longer than the “Wait Time” set. This saves costs for users with infrequent data transmissions on metered data plans.

7.1.2 Application Configure

Application Configure configures the mode of the GPRSV2 router.



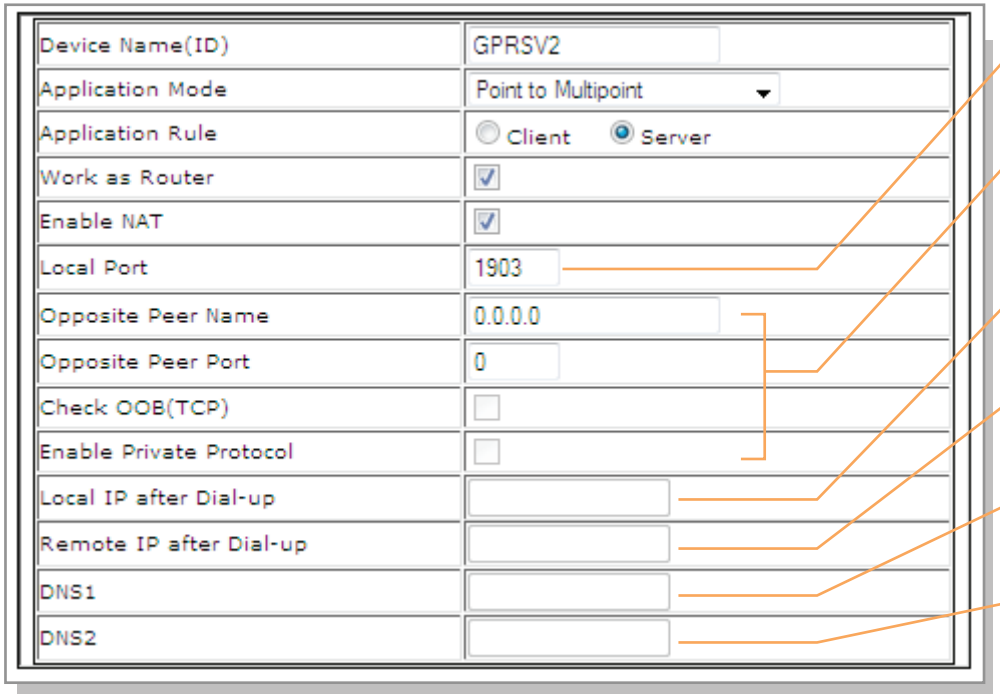
Sets the device name.

Sets up the FATBOX GPRSV2 to one of the following modes:
- Gateway (Point to Multipoint)
- Peer to Peer
- TCP Transparent Transport
- UDP Transparent Transport
- Reserve
- Modem (via Serial Port)

To configure as Client or Server.

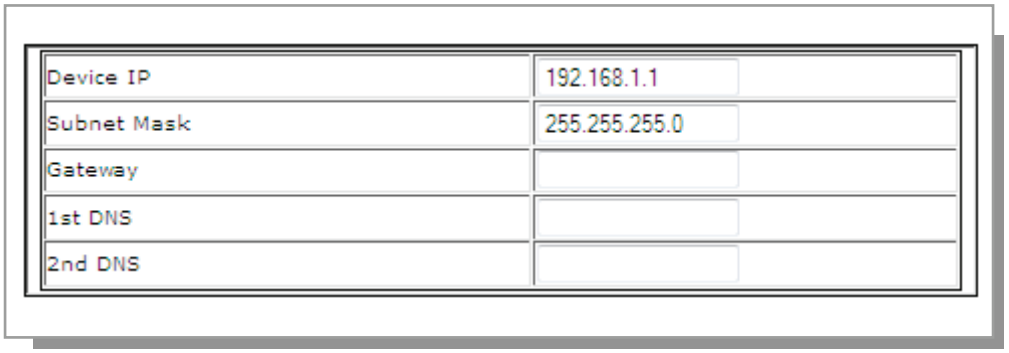
Checking activates the router function.

Checking activates the NAT function. See section 7.2.1 on pg. 24 for more on Network Address Translating with the GPRSV2.



7.1.3 Ethernet Configure

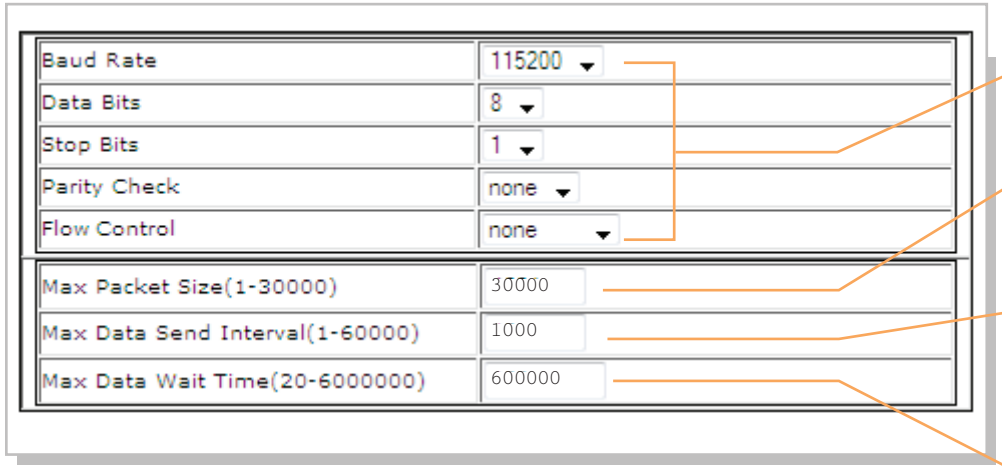
In most cases the Ethernet configuration (gateway and DNS servers) will be automatically assigned when network registration is completed. However you may choose to manually configure the settings via this menu.



7.1.4 Serial Configure

The serial port may be used for one of three operations

- By default, as a “COM” port for making configurations, to do flash uploading or for the unit to run as a lite data logger
- As a Transparent TCP or UDP port (e.g. a DTU) in “COM” mode - See also Section 7.1.8, Output Debug Info on Serial Port.
- As a “MODEM” Serial Port (e.g. for Dial Up networking or for Sending/Receiving SMS)



The factory default settings.

This condition sets the buffer size (30KB in this case). If the size of the data received by the Serial Port is more than this value, the data will be sent out

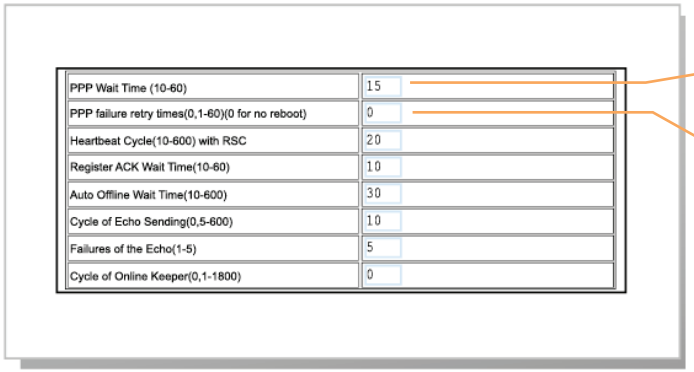
This condition sets the time limit between the reception of bytes before the FATBOX sends the data out the socket. In the given example, if no new data is received after the interval of 1 second, the data will be sent out.

This condition sets a regular interval for the FATBOX to send out the data received. If neither of the above-mentioned conditions occur, the FATBOX will be receiving data all the time but will only send this data out once that value set here has been reached (in this case 10 minutes).

These 3 types of serial parameters control the transfer conditions of serial port. If any one of these 3 conditions happens, the data received from serial port will be sent out to socket.

7.1.5 Timer Configure

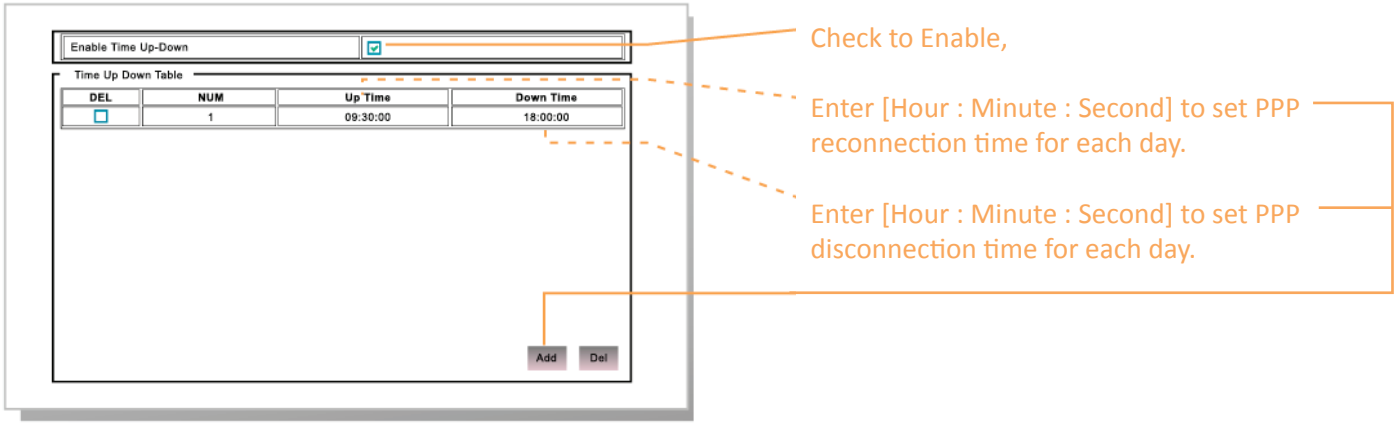
Here you can set the router to automatically reconnect PPP sessions or reboot.



The other settings in this segment are for specific network operations and we do not advise the normal user to make any modifications there.

7.1.6 Timer Up-Down

If the GPRS or NTP time sync[2] is reliable upon power up, the FATBOX can be programmed to have specific PPP connection and disconnection times each day.



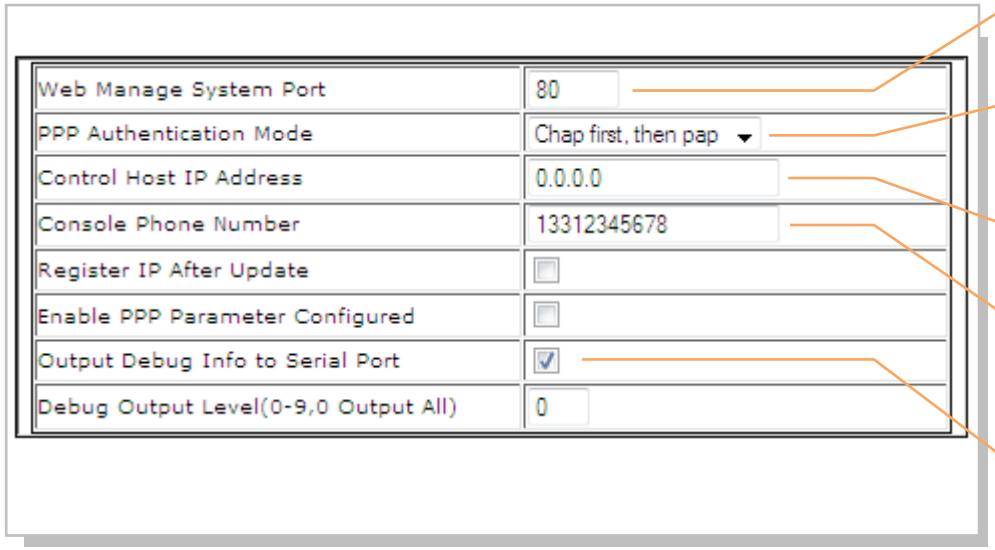
2. See Section 7.2.8 on page 28 for NTP

7.1.7 Reboot Redial Conditions

This is a custom application specific function. Please contact support@amplified.com.au for advanced user application support.

7.1.8 Advanced Parameters

You can use this menu to configure some of the specific parameters outlined below.



Web Manage System Port: By default it is set to 80. You may change it to improve security if the router is on a public IP network.

PPP authentication mode: Please ask Network Service Provider or else leave as it is. It can be configured to “PAP Only”, “CHAP Only” or “CHAP first and then PAP” (default).

Control Host IP address: Registers the IP address of the host that controls the PPP connection.

Console Phone Number: Configures the Caller ID to authenticate incoming calls for the “Remote Wake Up Manner: RING” (See Services Configuration, Section 7.1.1).

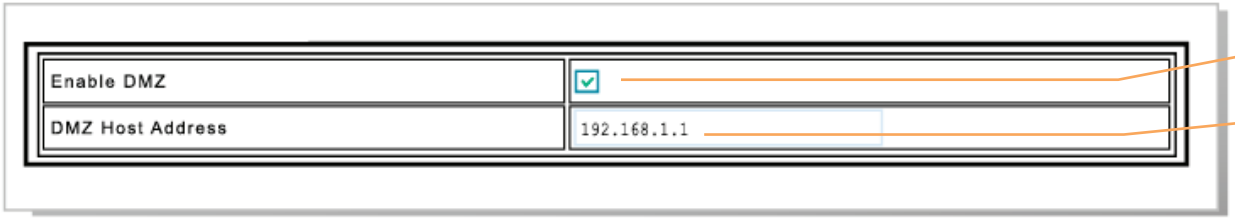
Output Debug Info on Serial Port: The default Serial Setting [115200/8/1/NoneParity/NoneFlowControl] is configured to “0” (i.e. Serial Port Debug Mode). If the router’s serial port is used for data transmission (e.g. TCP Serial Mode), this box must be unchecked

Advanced troubleshooting of PPTP/IPSEC and DYNDNS registration settings can be configured via Serial Console mode only.

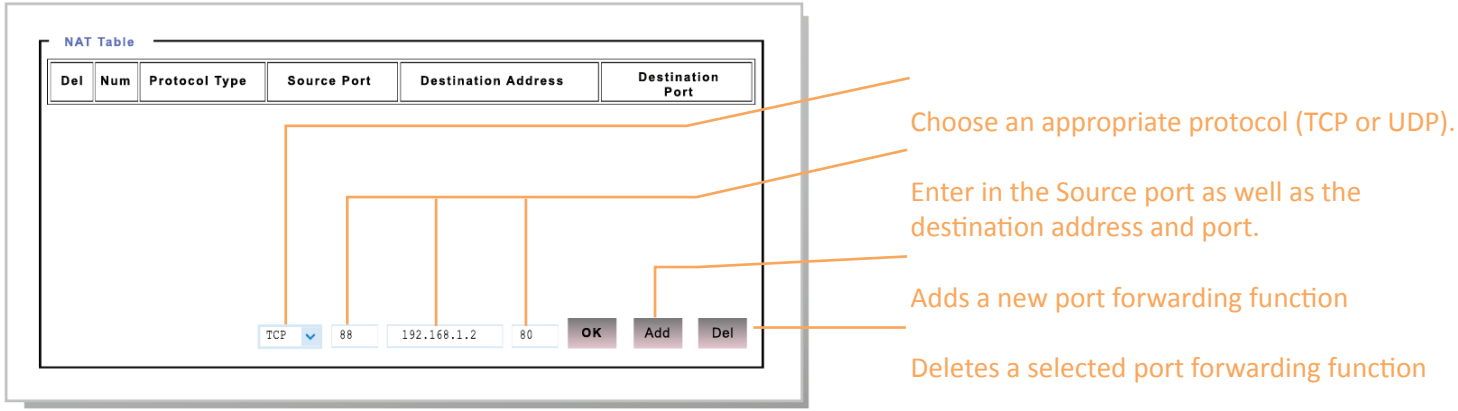
7.2 Network Configuration

7.2.1 NAT

For flexible LAN setups, FATBOX supports both DMZ and NAT (Network Address Translation) configurations.



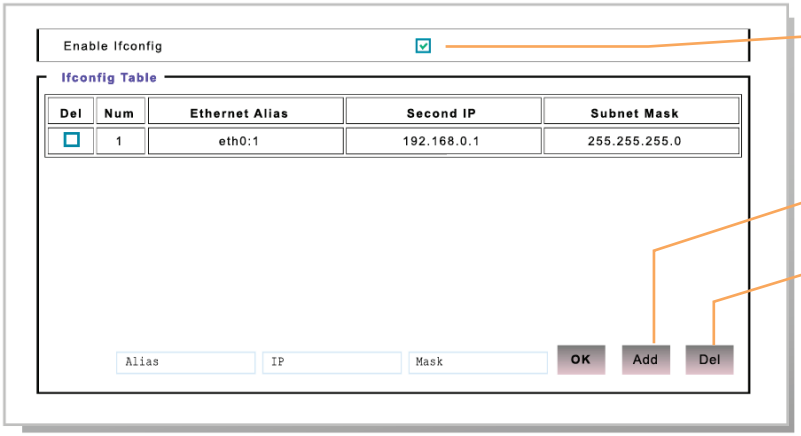
∴ DMZ must be DISABLED in order to allow Port Forwarding (NAT)



In the cited example, if a public IP (whether static or resolved by DDNS) of 222.222.222.222 is assigned by the network service provider, then pointing a remote application to 222.222.222.222:88 will connect it to local device 192.168.1.2's port number 80 (web server).

7.2.2 IfConfig

The router can be accessed through an additional IP address via its LAN port if IfConfig is set up.



Check to enable Ifconfig

Adds a an additional alias and IP address

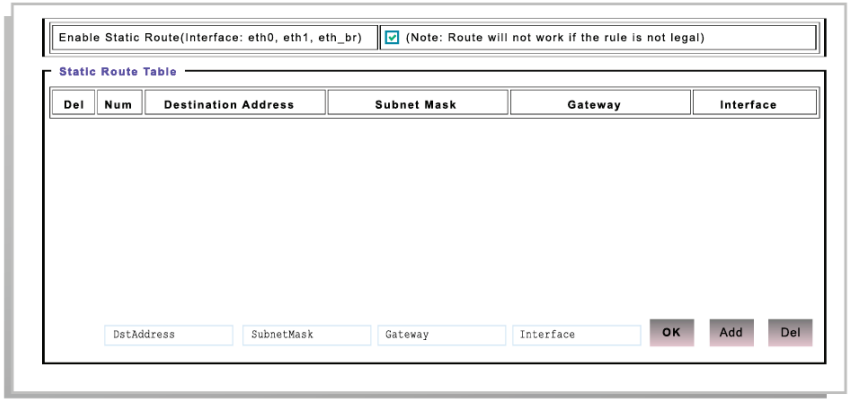
Deletes a selected alias and IP address

In the example given, Ethernet Alias is formatted as “eth0:xxx” to give an additional interface to access the router.

7.2.3 Static Route

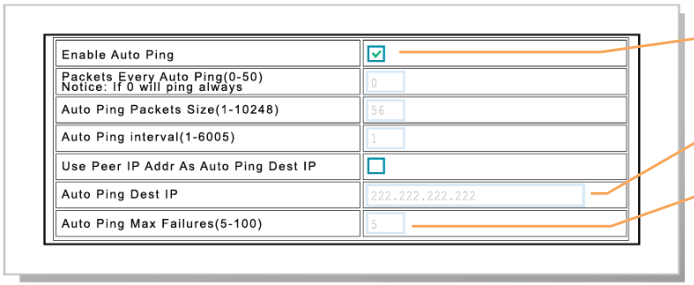
If you are set up for PPTP or IPSEC VPN, it is a typical requirement to configure your Static Route table to route VPN address packets via the VPN gateway and interface instead of an unsecured cellular gateway.

You can view the system route table via telnet by using cmd “route”.



7.2.4 Auto PING

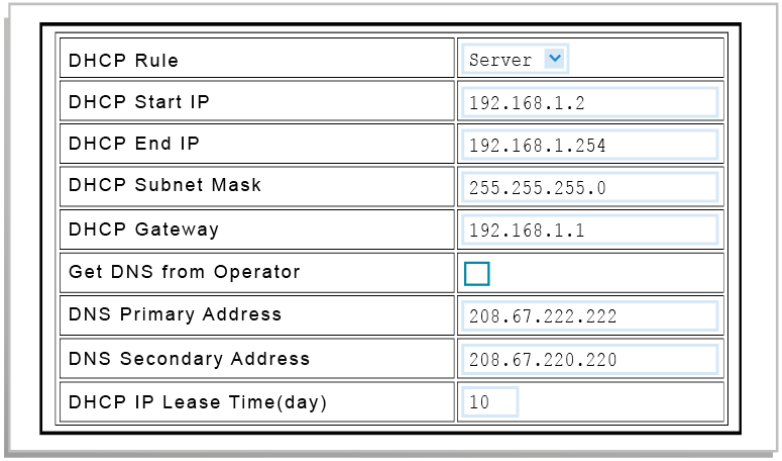
The Auto PING function reboots the FATBOX after the maximum number of PING failure from the target server IP. This is useful as in many cases the reboot frees a 'locked' PPP session.



7.2.5 DHCP

By default the inbuilt DHCP server automatically assigns IP addresses to the connected devices.

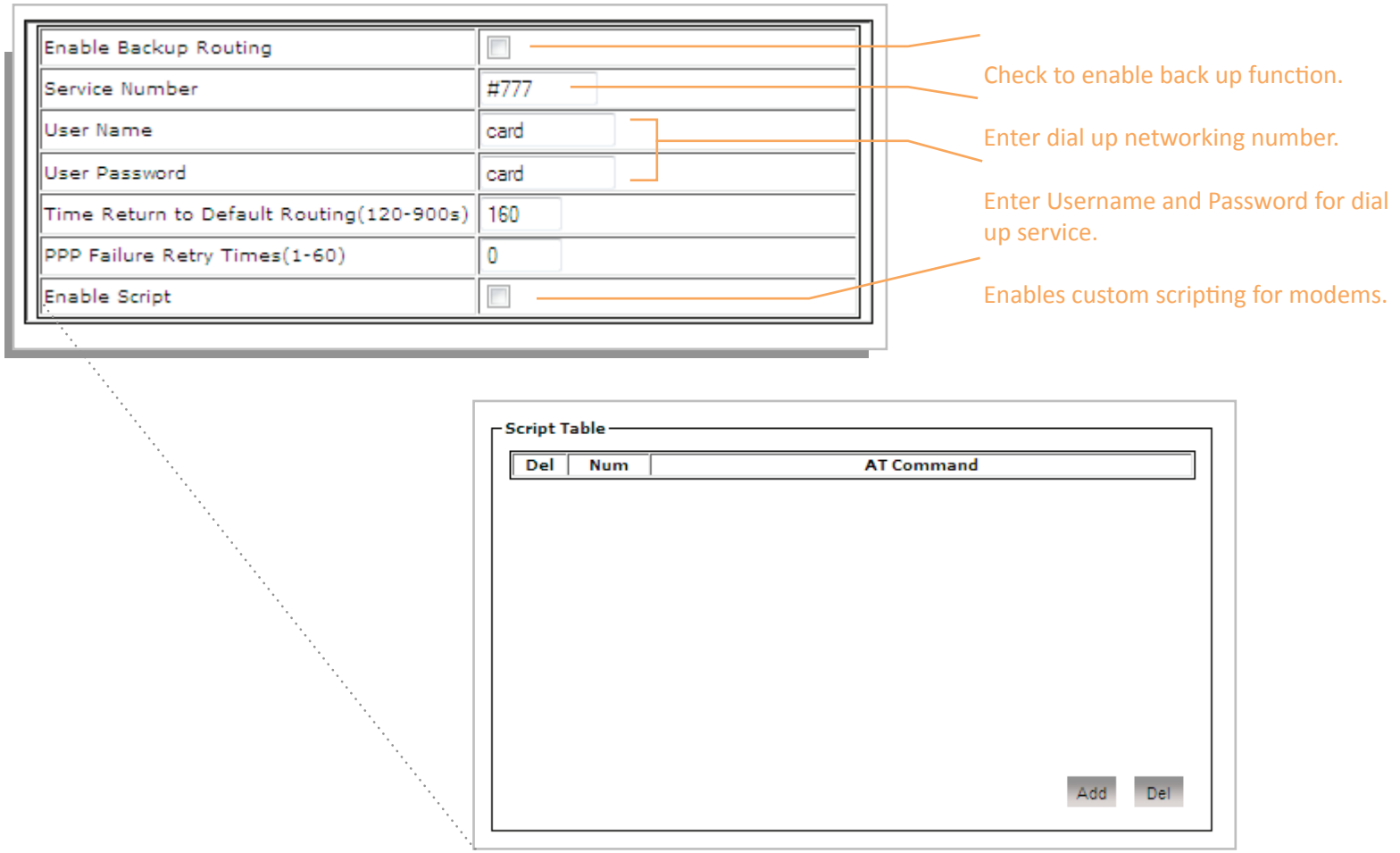
In the factory default, the DNS addresses are configured to point to OpenDNS server addresses.



7.2.6 Backup Routing (Serial Port)

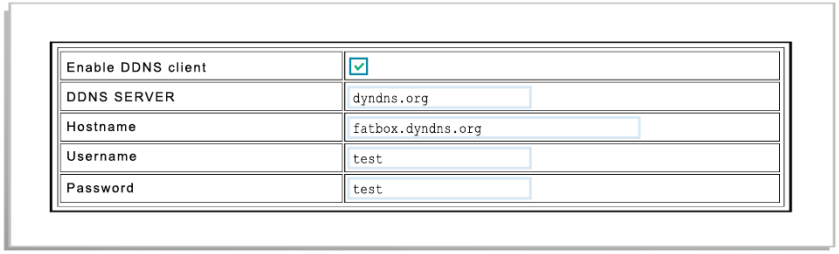
The FATBOX GPRSV2 can be configured to switch data connection from the cellular to the serial port modem (e.g. a PSTN or a Satellite SBD modem) in situations where redundancy is required.

Note that the PPP retry must not be set to “0” (infinite retry no reboot) or else the FATBOX will not switch over to connecting the backup route.



7.2.7 DDNS (Dynamic DNS)

In many cellular data networks, the provisioning of static and public IP is a difficult and often expensive exercise. If public IP is available, FATBOX can be configure to register its assigned remote public IP address to a DDNS service provider (e.g dyndns.org) so that its session's temporary IP can be resolved by a unique domain name.



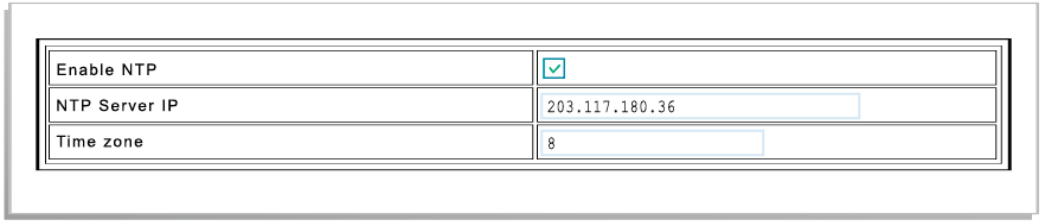
∴ Troubleshooting: Serial connection is required to access the serial console (See section 9). Enter "set advanced" and configure the DDNS debug information setting.

When DDNS (and PPTP) serial debug mode is ON, the serial terminal must be connected to enable sessions to be completed.

After troubleshooting is completed, please disable the debug to allow the FATBOX to operate without a serial device attached.

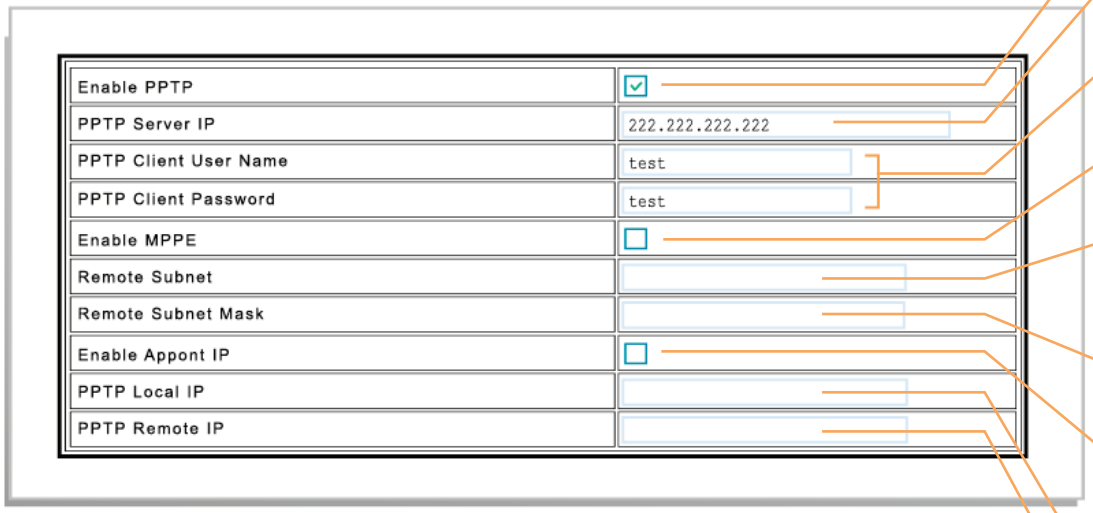
7.2.8 NTP

NTP (Network Time Protocol) is a protocol to synchronize the clocks of computers over a network. The FATBOX router can update its internal clock upon power up and connection to the Internet. This clock can be used to control the router's PPP connection and disconnection and is also used for some VPN protocols.



7.2.9 PPTP

Please configure PPTP settings to match your PPTP VPN server settings. In some cases you will also need to configure the router's Static Route (see section 7.2.3) to enable proper routing of VPN traffic via the PPTP tunnel.



Check to enable PPTP tunneling

Enter the PPTP server that the router will connect to (E.g 222.222.222.222)

Enter the Username and Password for the PPTP authentication

Enable MPPE encryption (Check with PPTP VPN server)

Enter the IP Address of the subnet on the server side (E.g. 100.168.1.0)
Note: You should use different subnets on the Server and Client side.

Enter the Subnet Mask on the server side (E.g. 255.255.255.0)

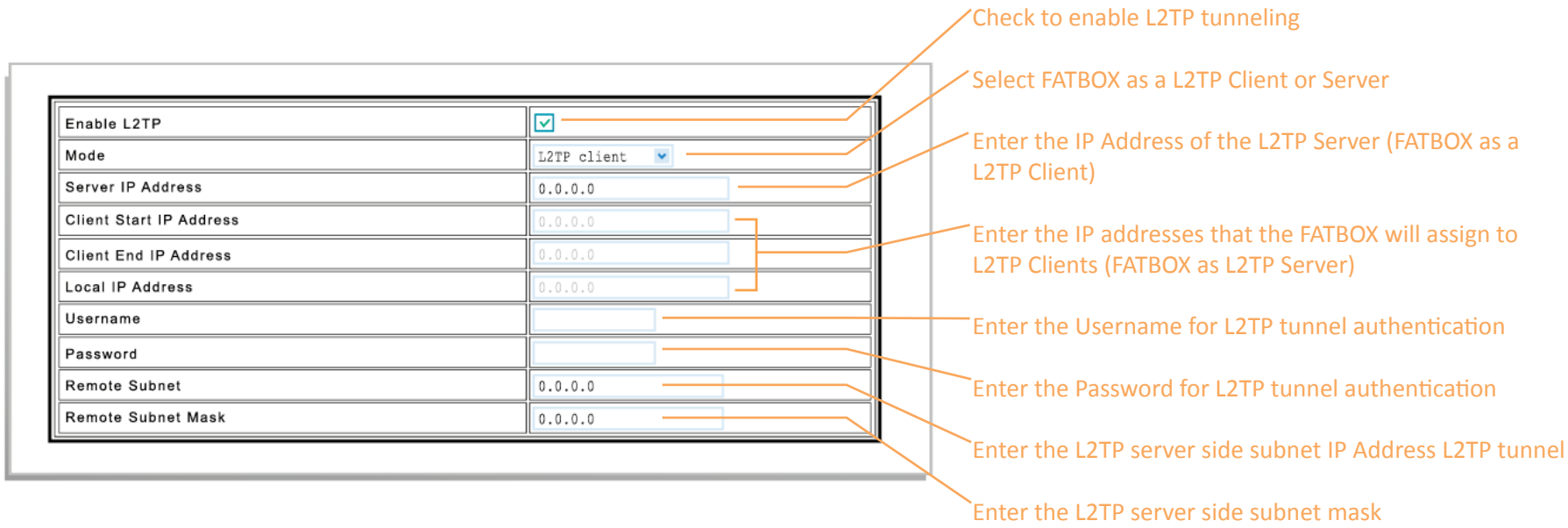
Check to assign VPN IP address to both client and server sides of the PPTP. The PPTP server should also be configured with this option also. If unsure leave unchecked to let the PPTP server auto assign.

Enter the Client side IP address of the PPTP

Enter the Server side IP address of the PPTP

7.2.10 L2TP

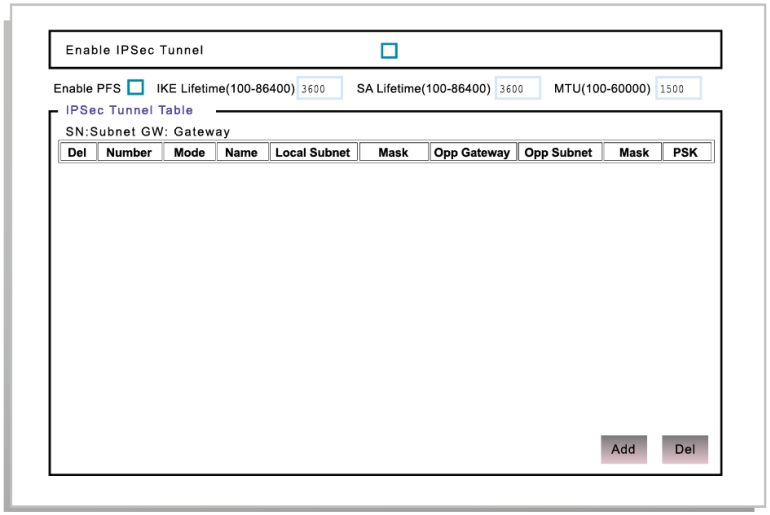
FATBOX can support L2TP tunneling either as a Client or a Server.



7.2.11 IPSEC Tunnel

FATBOX supports IPSEC (PSK) tunnels to an IPSEC VPN Server configured to the following settings.

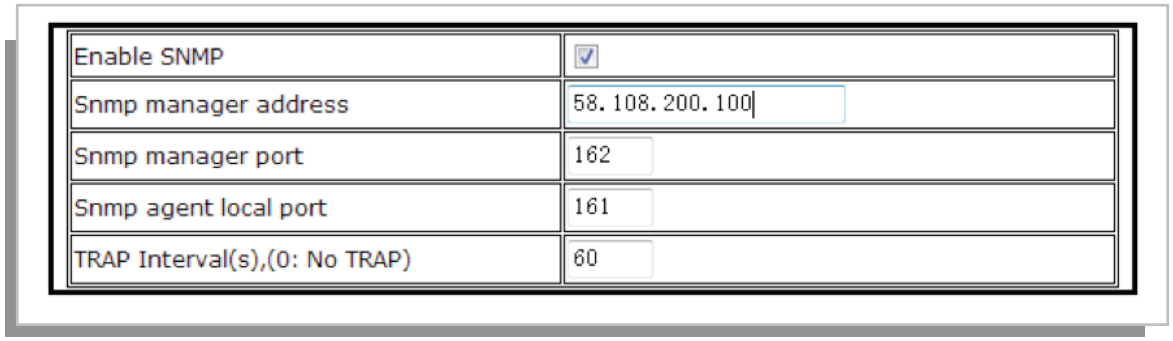
Using IKE
Exchange Mode: Main Mode
Remote Identity Type: IP Address
Using Pre-Shared Keys (PSK)
Encryption Algorithm: MD5
Configurable MTU, SA and IKE Lifetime
Enable/Disable PFS



The configuration and deployment of IPSEC is exact and expected to be configured by expert networking engineers with working knowledge of their IPSEC VPN servers at their back-office. Please contact support@amplified.com.au for further information.

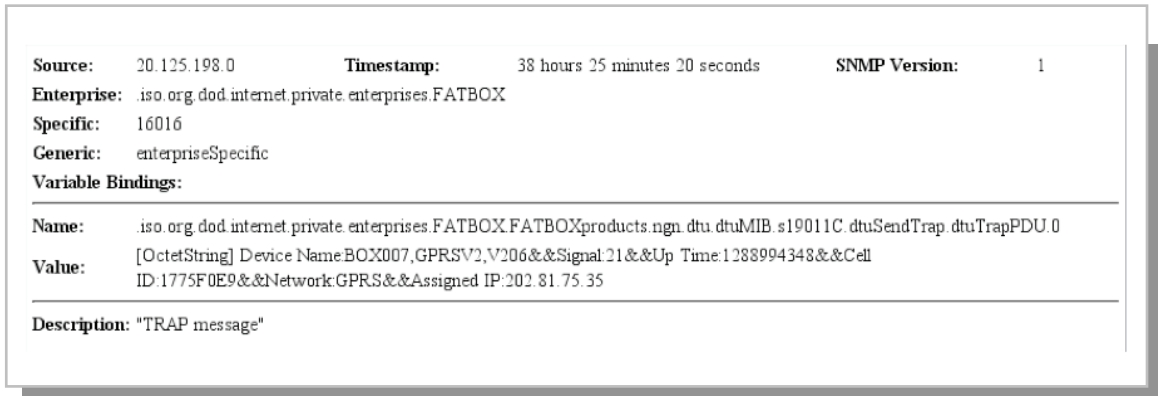
7.2.12 SNMP Parameter Configure

The FATBOX supports SNMP v1 to allow Network Management Systems (NSM) to monitor system parameters and also receive TRAP messages periodically from the FATBOX.



TRAP message sends the following information,

- Device Name (ID), Device type, Device firmware version
- Signal strength (static on GPRS version and real-time on EDGE version)
- Up Time (Epoch time ticks)
- Attached cell ID
- Attached network type
- Assigned IP address

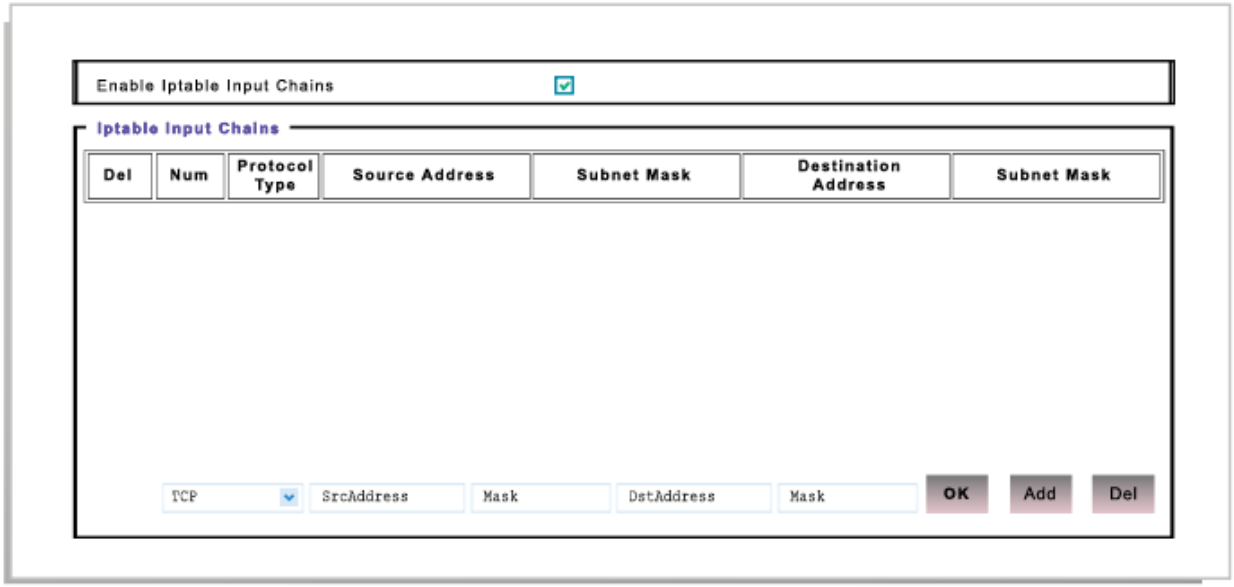


7.3 Security Configure

FATBOX supports **Iptable** input and output table configuration. Iptable scripting is also supported.

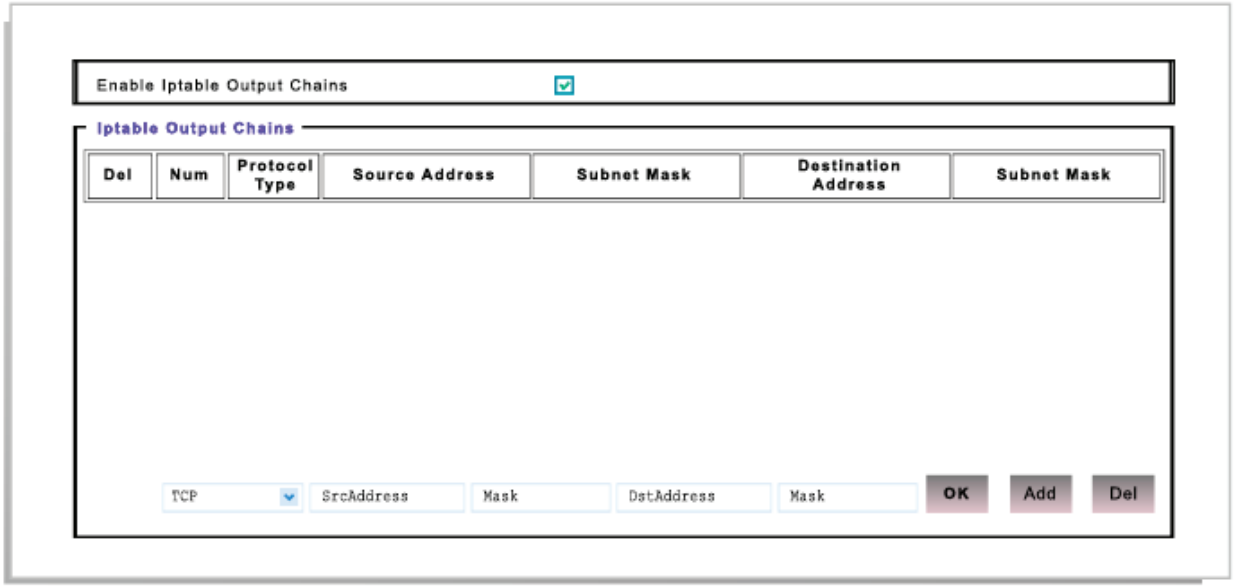
7.3.1 Iptable In

Incoming to Firewall
For packets generated by remote server and going into the FATBOX router



7.3.2 Iptable Out

Outgoing from Firewall
For packets generated locally and going out of the FATBOX router



7.3.3 Iptable Script

Iptable Script Guidelines (supporting iptables v1.2.7a)

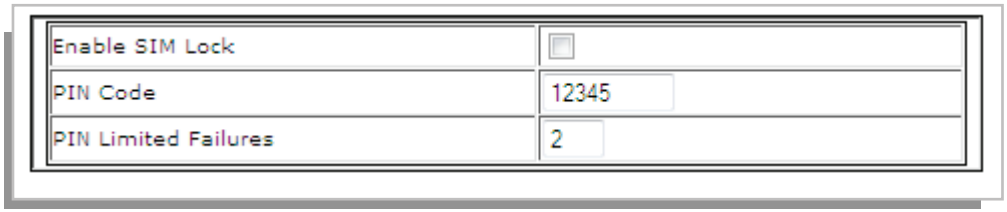
```
Usage: iptables -[AD] chain rule-specification [options]
       iptables -[RI] chain rulenum rule-specification [options]
       iptables -D chain rulenum [options]
       iptables -[LFZ] [chain] [options]
       iptables -[NX] chain
       iptables -E old-chain-name new-chain-name
       iptables -P chain target [options]
       iptables -h (print this help information)
```

```
Commands:
Either long or short options are allowed.
  --append  -A chain          Append to chain
  --delete  -D chain          Delete matching rule from chain
  --delete  -D chain rulenum
                Delete rule rulenum (1 = first) from chain
  --insert  -I chain [rulenum]
                Insert in chain as rulenum (default 1=first)
  --replace -R chain rulenum
                Replace rule rulenum (1 = first) in chain
  --list    -L [chain]        List the rules in a chain or all chains
  --flush   -F [chain]        Delete all rules in  chain or all chains
  --zero    -Z [chain]        Zero counters in chain or all chains
  --new     -N chain          Create a new user-defined chain
  --delete-chain
        -X [chain]        Delete a user-defined chain
  --policy  -P chain target
                Change policy on chain to target
  --rename-chain
        -E old-chain new-chain
                Change chain name, (moving any references)
```

```
Options:
  --proto      -p [!] proto    protocol: by number or name, eg. `tcp'
  --source     -s [!] address[/mask]
                    source specification
  --destination -d [!] address[/mask]
                    destination specification
  --in-interface -i [!] input name[+]
                    network interface name ([+] for wildcard)
  --jump       -j target
                    target for rule (may load target extension)
  --match      -m match
                    extended match (may load extension)
  --numeric    -n           numeric output of addresses and ports
  --out-interface -o [!] output name[+]
                    network interface name ([+] for wildcard)
  --table      -t table      table to manipulate (default: `filter')
  --verbose    -v            verbose mode
  --line-numbers             print line numbers when listing
  --exact      -x           expand numbers (display exact values)
[!] --fragment  -f           match second or further fragments only
  --modprobe=<command>       try to insert modules using this command
  --set-counters PKTS BYTES    set the counter during insert/append
[!] --version   -V           print package version.
```

7.3.4 SIM LOCK Configure

For network requiring SIM PIN, please enable and configure SIM Lock code very carefully. Usually, after 3 unsuccessful SIM PIN tries, the SIM will be locked and can only be unlocked by the operator.



7.4 System Manage

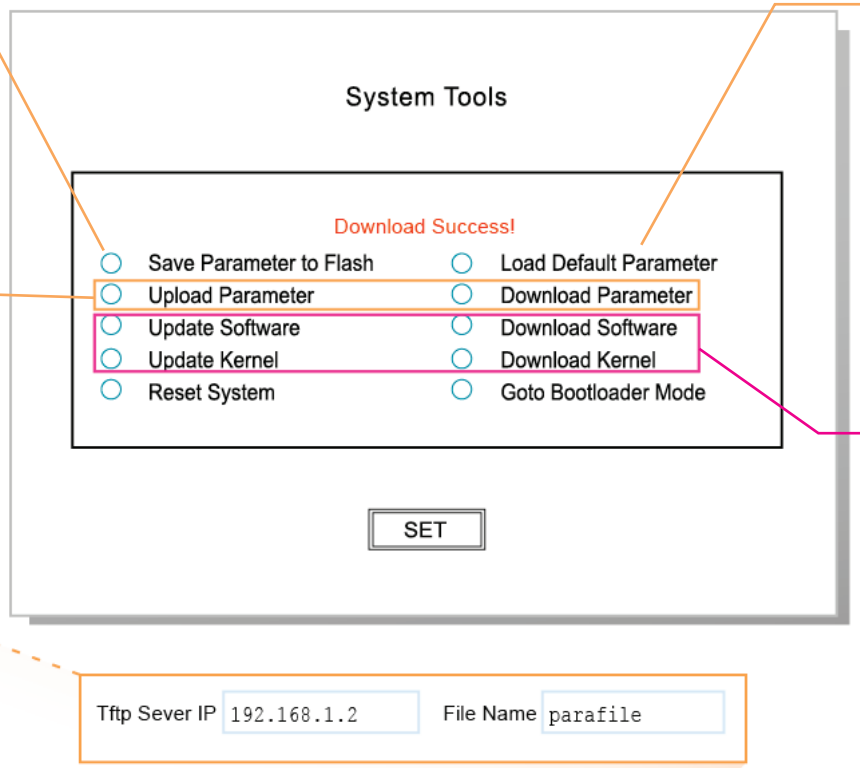
7.4.1 Systems Tools

In this section are the system management tools for flash, kernel, parameters management and also the configuration of username and password to access the router. You can also find useful information about the cellular signal strength and basic connection of the device under the Device Status tag.

Check and Click "SET" to write the changes to the FATBOX's flash.

▷ Do not reboot/power-down the device until the writing process is acknowledged as completed (i.e 'Parameter Save Success').

(In order to run in an ETH-attached computer you will require a TFTP program such as tftpd32.) Check "Download Parameter" to save FATBOX Configuration parameters to a text file (e.g. parafile). You can then modify the file with a text editor and upload back to the FATBOX using the "Upload Parameter" feature. You will be required to indicate the computer's IP address and the parameter file name. When you are done, save the parameter to flash and reset the router.

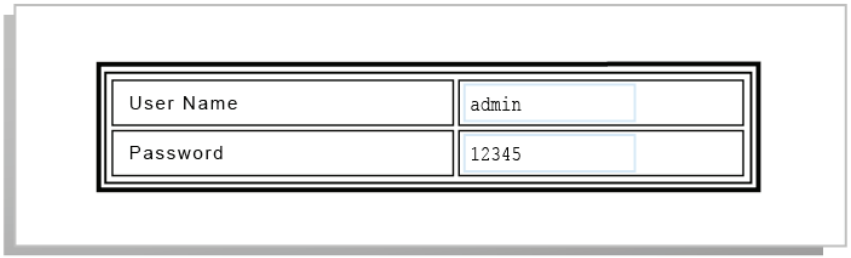


Allows uploading of the FATBOX parameters to Factory Default. Note that if the flash is corrupted, access to the Web Console may not be possible and the Factory Default will have to be load via the Serial Console. (See section 9.3)

▷ DO NOT EXECUTE unless under guidance of an Amplified Engineering technical support staff as the device's flash kernel or firmware could be corrupted if not done correctly.

7.4.2 User Manage

You may change the FATBOX's log in page's Username and Password settings for better security. To revert back to factory default see section 9.3 on page 40.



7.4.3 Device Status

This page provides *real time* update of the router's operation and network status, e.g. network signal strength and status, assigned IP addresses and VPN status.

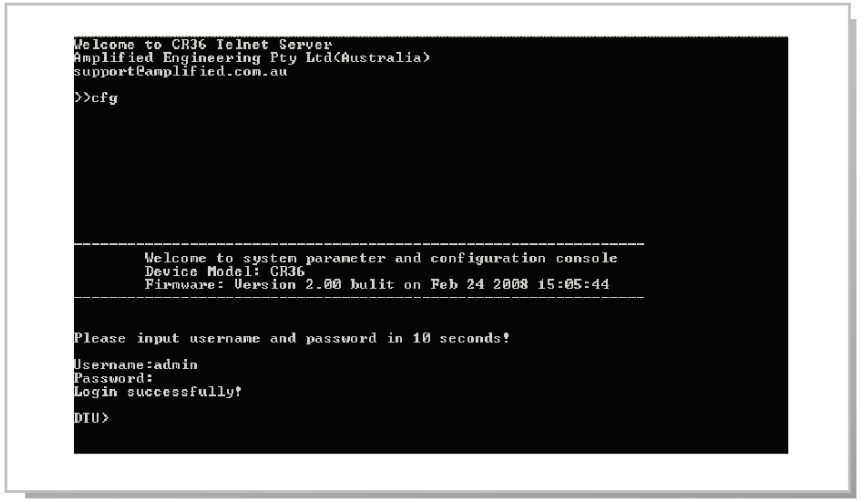
The table below will be able to give you some helpful tips regarding the level of Signal Strength

Quality of Signal	Levels	Description
Marginal	-95dBm or lower.	At these sort of levels, it is very likely that you may suffer low throughput and disconnects due to cell loading/breathing even with an outdoor antenna.
Workable under most conditions	-85dBm to -95dBm.	Probably worth considering an outdoor gain type antenna. Could suffer poor throughput and disconnects due to cell loading/breathing.
Good	-75dBm to -85dBm	Normally no problem holding a connection with this sort of level (even with cell breathing) without the use of an external antenna.
Excellent	Above -75dBm	Should not be affected by cell breathing/loading and should not require an external antenna.

In the case that your browser is unable to connect to the FATBOX, you can still configure the device via TELNET.

∴ You must be able to 'ping' the device in order to TELNET.

8.1 Logging In

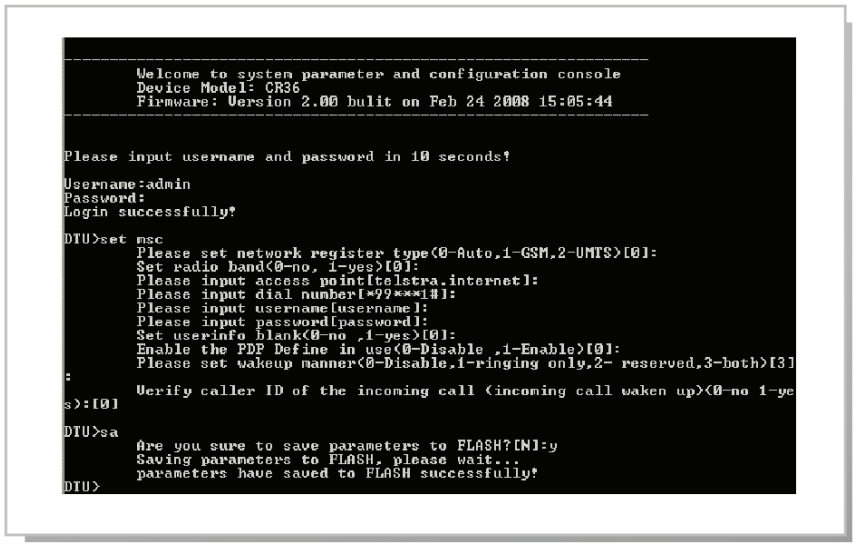


Open a new command prompt session *(Windows START>Run> Type "cmd" <Enter>).*

Enter "telnet 192.168.1.1" and the screen on the left will be shown. Log in by entering User Name and Password.

Enter "cfg" and complete the log in within 10 seconds (The default Username is "admin" and password is "12345").

8.2 Configuring Cellular Operator Settings



Enter "set msc" at the "DTU>" prompt.

Enter the parameters provided by your cellular operator.

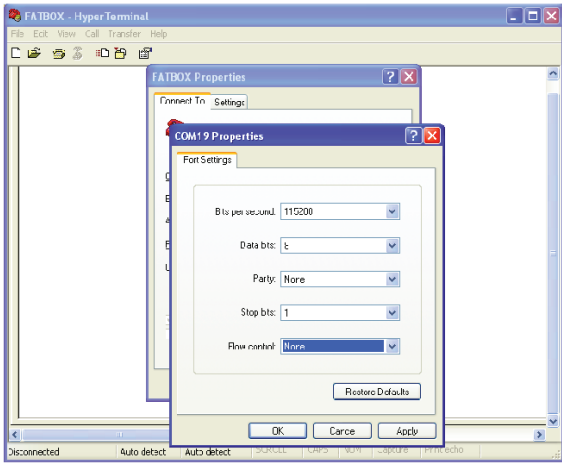
Enter "sa" to save changes to the router's Flash memory.

You can now reboot the box by entering "reset" or by switching off its power for a few seconds.

▷ IMPORTANT: Please wait till the acknowledgement message for saved changes is displayed before resetting the FATBOX. A premature reset may corrupt the unit's configuration. If this happens you will need to use the serial console to load the default settings to the box. (See section 9.3.3 to do this.)

9.1 Logging in via the Serial Port

If the FATBOX's firmware or parameters are corrupted, there is the possibility that the FATBOX may not respond to 'ping', TELNET or the web browser. You will need to access the box via its serial port to return the parameters in flash to the factory default.



Set the computer's serial port to the following configuration via a HyperTerminal program (refer to settings on page 15).

Once you are connected, keep the 'SPACE' key pressed while switching ON the FATBOX.

When prompted, please enter the username and password. If you have not changed the Log in settings the default username and password are as following.

USERNAME: admin
PASSWORD: 12345

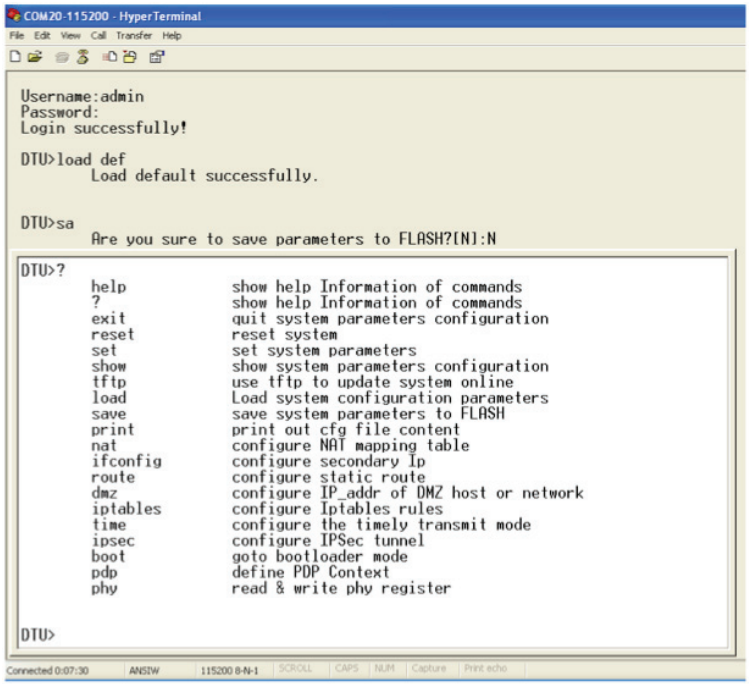
9.2 Serial Console Commands

All configuration commands are available via the Serial Console. As this mode is to be used by network professionals, this manual will not cover the usages of other commands.

To see a list of available commands type "?".

To display all settings and useful information for troubleshooting type "show all".

The Serial console configuration is for advanced users. Please email support@amplified.com.au for technical assistance.



9.3 Revert to Factory Default

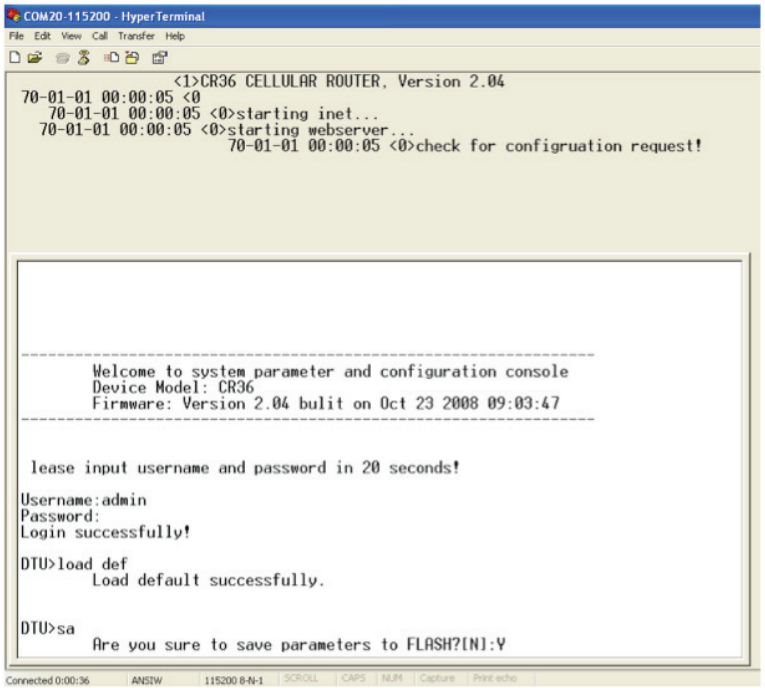
There are 3 ways to revert the FATBOX back to factory default settings (e.g. to setup for new project or when username/password is forgotten).

Method 1: Enter the device IMEI number via TELNET console as the 'Username' with password as 'X'. IMEI number can be found on the printed sticker on the bottom of the FATBOX.

Method 2: Do a "load default" from serial/TELNET console or via the web console

If your are able to access the FATBOX's web configuration pages, please got to section 7.4.1 to "Load Default Parameter" via the System Tools menu.

The FATBOX's Flash memory may have been corrupted if the box was powered down before it had completed saving changes. As the result the DHCP function may not work and the user would not be able to access the router via the web browser or by TELNET.



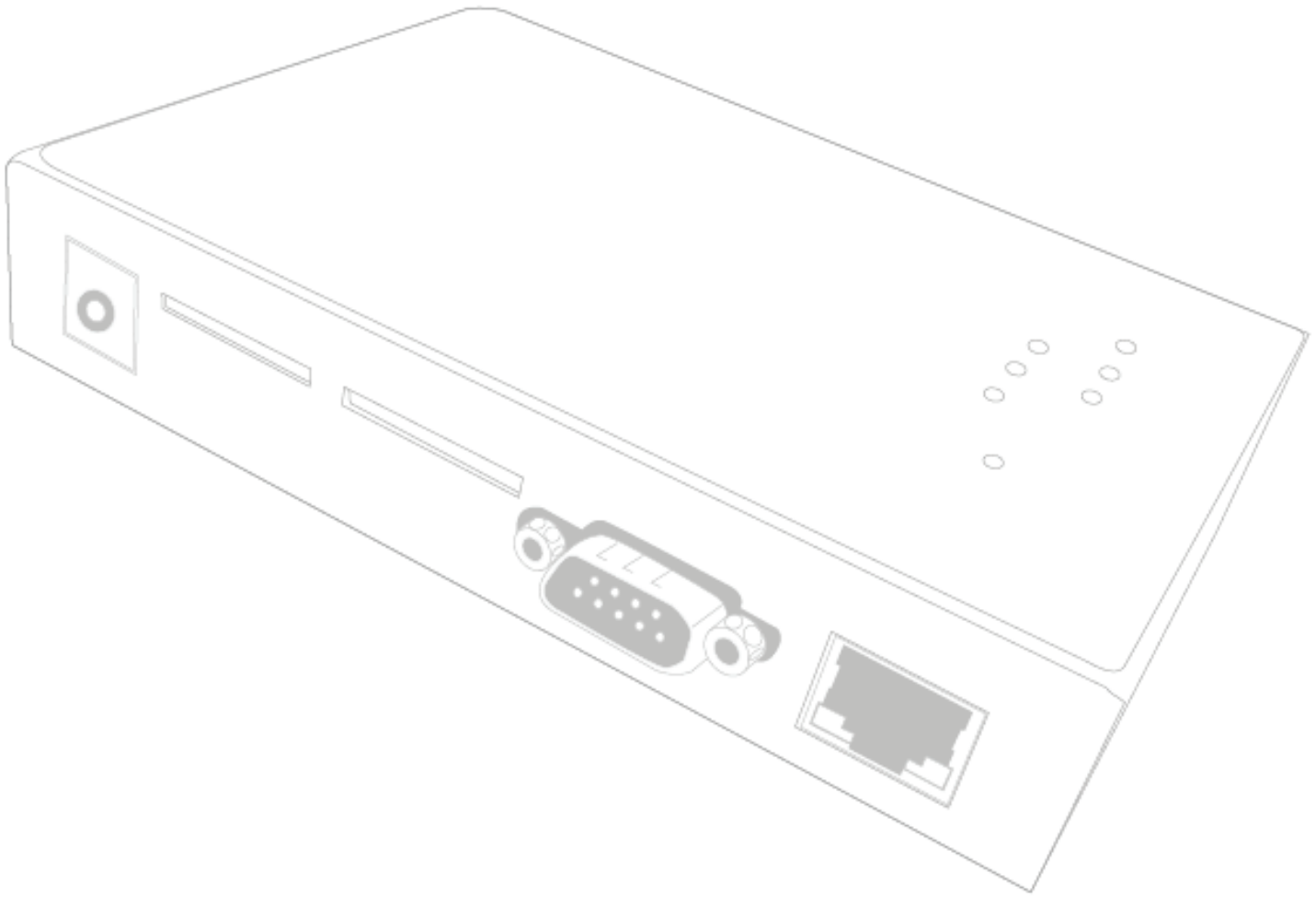
To revert theFATBOX to factory default via the serial port, complete the log in process described in section 9.1

After you are logged in enter the following commands

1. Enter "load def" to load default
2. Enter "sa" to save the changes to Flash
3. Wait for the acknowledgement to complete before rebooting the FATBOX GPRSV2.

Method 3: Enter "AMPLIFIED" via Serial Console as the 'Username'.

The above is designed to allow only persons physically handling the FATBOX to revert the unit back to factory default without the valid username/password combination.



Your first call for support should be your local FATBOX solutions partner. If that fails to solve your problems or answer your queries, please contact us via support@amplified.com.au and we will get back to you latest the next business day.

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