



THE MANUAL

Creating quick, versatile &
robust connectivity using
cellular networks.

EDITION 01/ AUGUST 2013

DESIGNED IN AUSTRALIA. ASSEMBLED IN SINGAPORE.

CONTENTS

0 1. **G1 ABILITY (COMMON USES)** 03

0 2. **GETTING TO KNOW YOUR G1 ROUTER** 04 - 05

0 3. **QUICK START GUIDE** 06 - 12

0 4. **CONFIGURE FUNCTIONS** 13 - 23

0 5. **SAFETY** 24

0 6. **CONTACT AMPLIFIED ENGINEERING** 25

COMMON USES

G1
HSDPA
gateway

The FATBOX G1 provides stable and robust data connectivity gateway for remote and mobile applications.

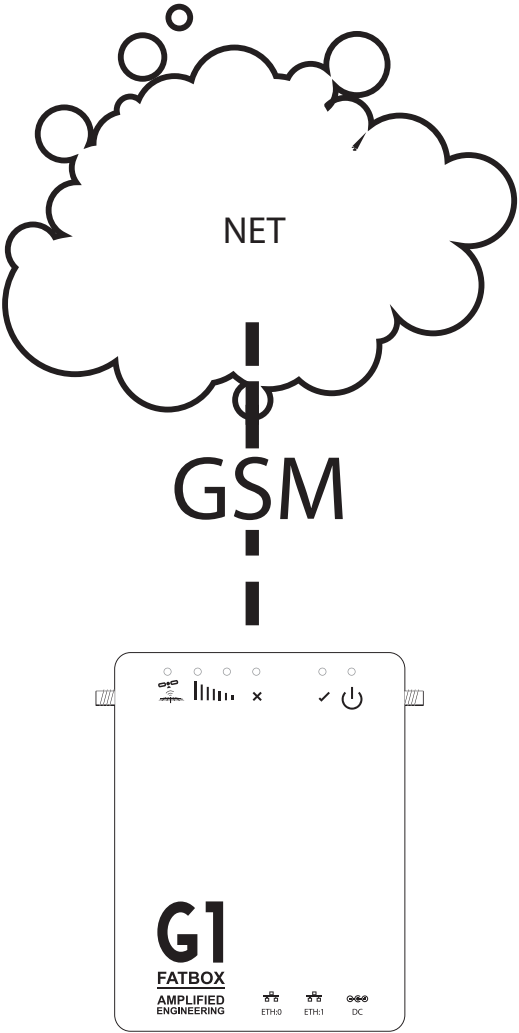
Designed for succesful deployment of remote and mobile networked applications in demanding internet data connectivity applications requiring HSDPA (7.2Mbps/sec) or EDGE and GPRS Class 12 speeds.

RETRIEVE
DATA

Telemetry
CCTV Backhaul

SET UP INSTRUCTION

QUICK START GUIDE	PAGES: 6 - 12
CONNECT DEVICES	PAGES 13 - 19
LAN SETTINGS	PAGES 20 - 21
3G SETTINGS	PAGES 22 - 23



CONNECT
MOBILE TERMINALS

POS Terminals & ATMs

SET UP INSTRUCTION

QUICK START GUIDE	PAGES: 6 - 12
CONNECT DEVICES	PAGES 13 - 19
LAN SETTINGS	PAGES 20 - 21
3G SETTINGS	PAGES 22 - 23

CONTROL
REMOTE DEVICES

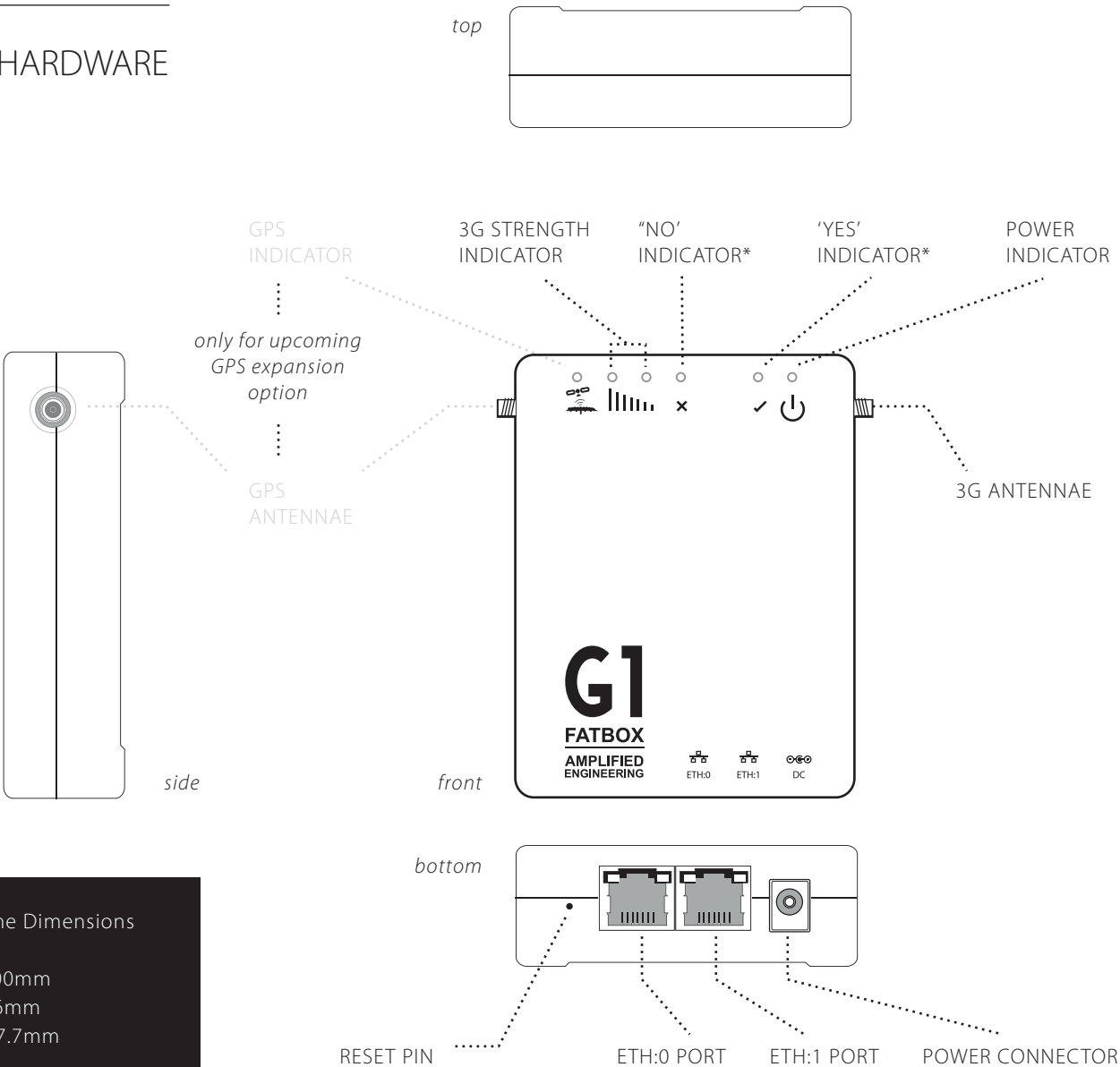
Digital Signages
Unmanned Vehicles

SET UP INSTRUCTION

QUICK START GUIDE	PAGES: 6 - 12
CONNECT DEVICES	PAGES 13 - 19
LAN SETTINGS	PAGES 20 - 21
3G SETTINGS	PAGES 22 - 23

ABOUT

THE HARDWARE



Frame Dimensions

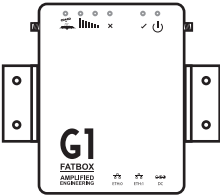
L: 100mm
B: 76mm
H: 17.7mm

LED COLORS		
	green	Device powered up
	green	'Yes' Status
	red	'No' Status
	yellow	Connection poor
	green	Connection good
	N.A	N.A

POWER & OPERATING CONDITIONS	
POWER	12-24VDC @ 0.3-0.15A nominal 110-230VAC power adaptor provided
OPERATING TEMPERATURE	-20°C to +55°C

ABOUT

UPGRADES

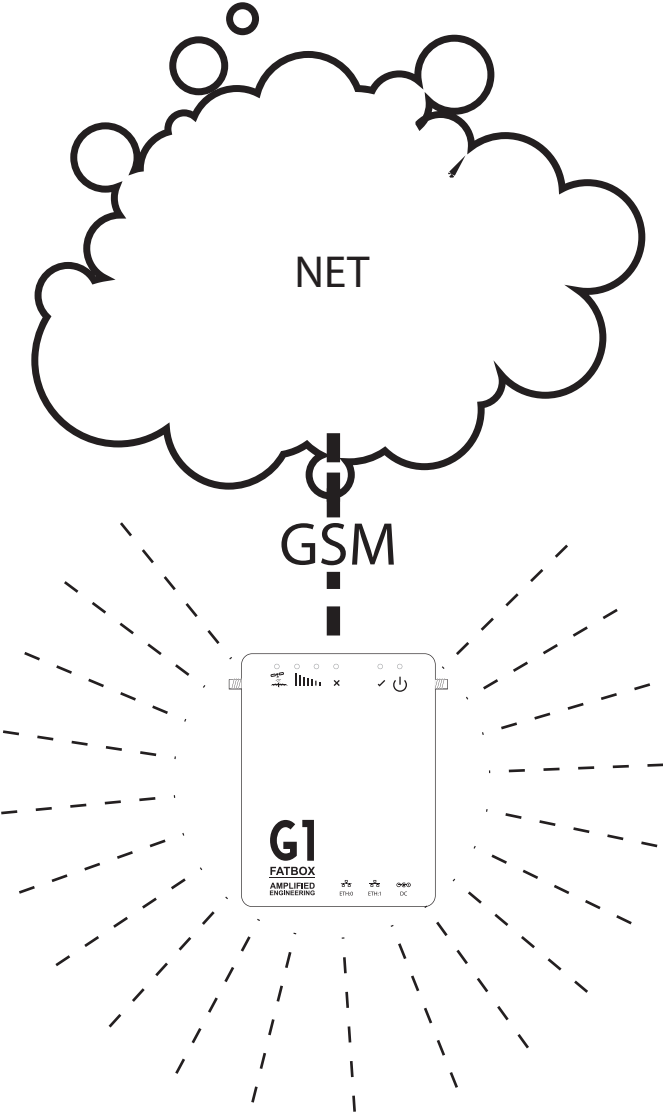
G1 UPGRADE OPTIONS	
ANTENNAE	Base Station Antenna  <i>Frequency</i> 800/900/1800/1900/2100 MHz <i>Polarization</i> Vertical <i>Max Power</i> 50W <i>Height</i> 477mm +10 <i>Impedence</i> 50Ohm OTHER OPTIONS <i>Cable Length</i> 1) 50cm or 2) 200cm <i>Mounting</i> 1) Wall Mount or 2) Pole Mount
MOUNTING BRACKETS	For industrail applications that require the FATBOX to be securely fixed, the FATBOX can be ordered with attached mounting brackets. 

TECHNICAL SPECIFICATION

Operating System	- Linux 3.3.X running on Qualcomm Atheros 400MHZ MIPS32 CPU - Firmware upgrade over Ethernet TCP
Wireless Cellular Interface	- HSDPA 7.2M downlink and 384K uplink (850/1900/2100) - EDGE and GPRS Class 12 (850/900/1800/1900) - RX Diversity on HSDPA/UMTS (850/2100)
LAN Interface	- 2 x 10/100BaseT (Bridged with DHCP server)
Networking Functions	- Dynamic DDNS (using DYNDNS.ORG) to map IP addresses - Port forwarding of single ports or range of ports to your devices - Automatic PING on retries failure to reboot router in difficult networks - Site-to-Site IPSEC VPN using aes-sha/md5 implementation

QUICK START
GUIDE

ESTABLISH A
CONNECTION



QUICK START GUIDE

WHAT YOU'LL NEED

IN THE BOX



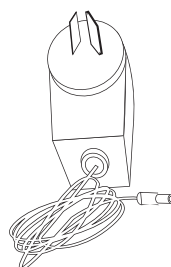
FATBOX



SCREWDRIVER



CAT5 CABLE



POWER CABLE



ANTENNAE

Together with your FATBOX you will need information of the IP Address of your Default Gateway and DNS Server.

Different antenna options are offered. The table on page 5 helps you to choose the right type for your application.

YOU NEED TO PREPARE



SIM CARD



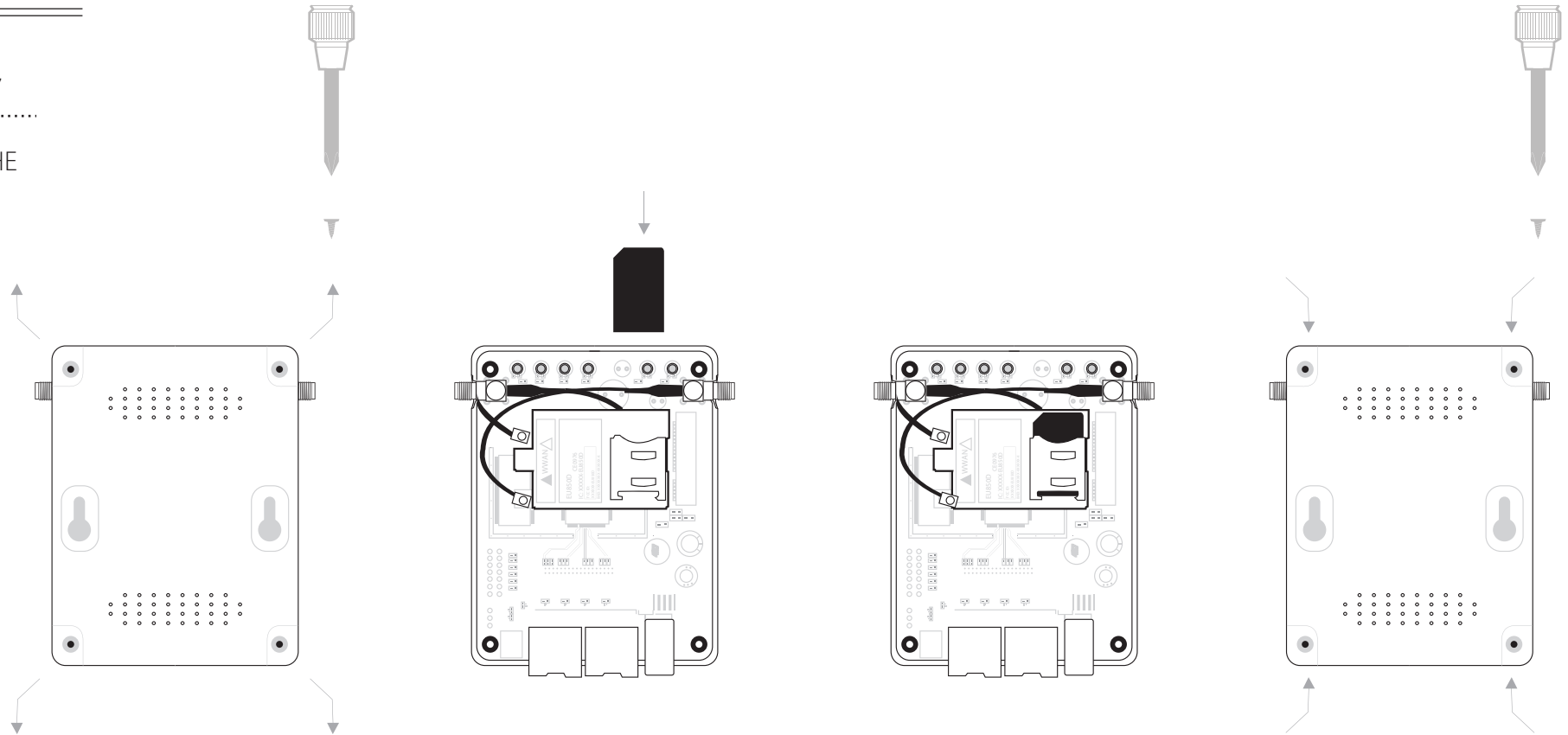
ADMINISTRATOR PC

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

QUICK START GUIDE

STEP 1 OF 7

INSERTING THE SIM CARD



Remove the screws on the bottom
of the casing.

Insert your SIM card into the mount provided.

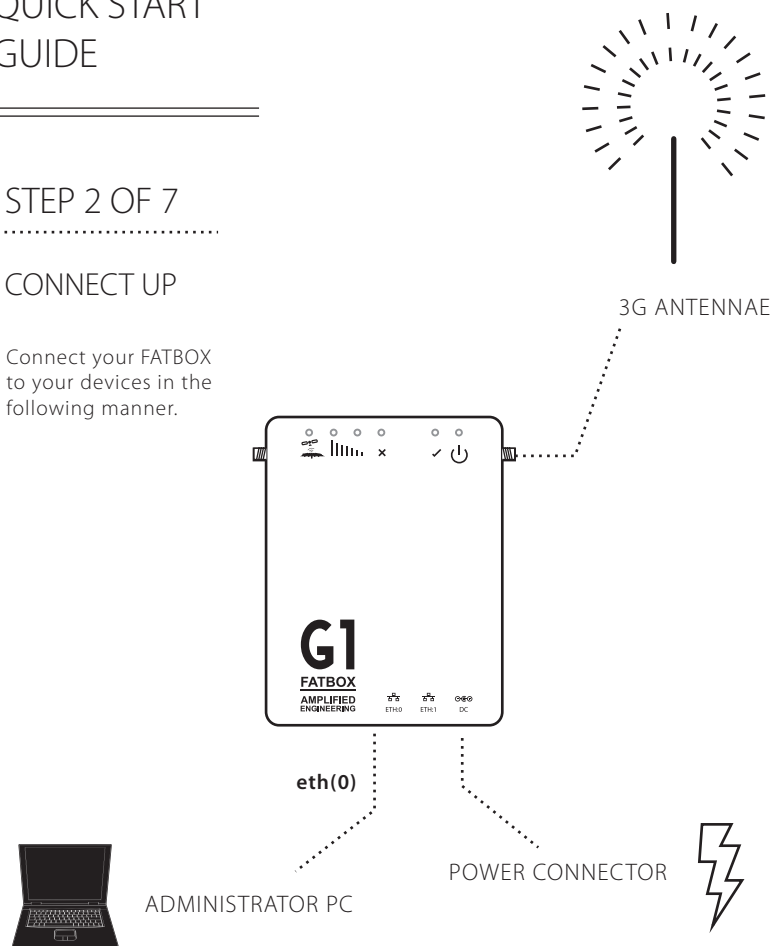
Firmly screw the casing back.

QUICK START GUIDE

STEP 2 OF 7

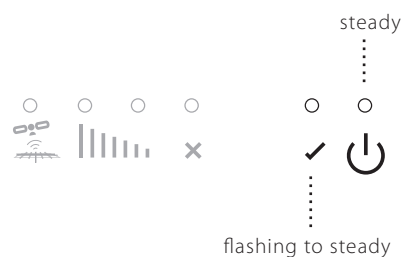
CONNECT UP

Connect your FATBOX to your devices in the following manner.



YOU SHOULD SEE

The 'power indicator' on and the 'yes indicator' go from flashing to steady.



STEP 3 OF 7

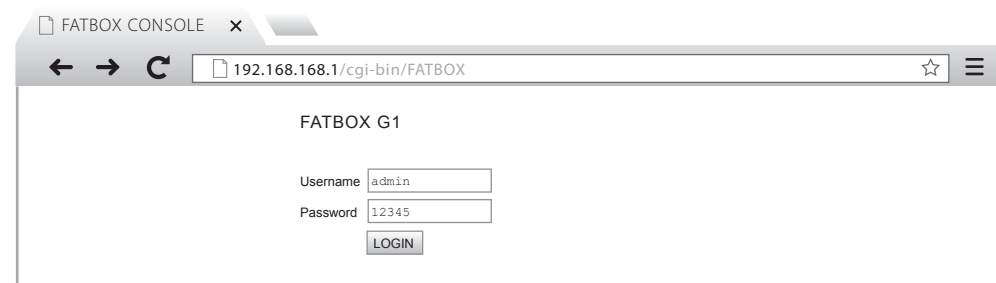
LOG IN

Wait for a few moments for your computer to register the device then open up your web browser (we recommend using Firefox or Chrome).

Key in "**192.168.168.1**" into your URL tab. (We advise users to turn off their laptop's wireless connection to avoid the chance of any clashes in IP addressing during the log in process).



You should see the following login page:



The default user name is: **admin**
The default password is: **12345**

Log in.

QUICK START
GUIDE

STEP 4 OF 7

CONFIGURE THE
ROUTER

You will automatically be taken to the **Quick Start** Page when you log in.

The settings in this page will enable your FATBOX to create a connection.

FATBOX G1

MENU OPTIONS

- Quick Start
- LAN
- 3G
- Port Forwarding
- Dynamic DNS
- Management
- System Status
- Logout

Basic settings to setup your FATBOX G1 router as a 3G/HSPA internet access gateway for the LAN port.

- LAN (eth0 and eth1) Port Settings
- LAN IP Address
- LAN Netmask
- 3G/HSPA Cellular Settings
- APN
- Username (PAP/CHAP only)
- Password (PAP/CHAP only)
- SIM PIN Code (if required only)

192.168.168.1

255.255.255.0

your_apn

Update

Click to update settings to router.
A reboot will be required for
updated settings to take effect.

Configure your LAN IP Address. By default the address is 192.168.168.1

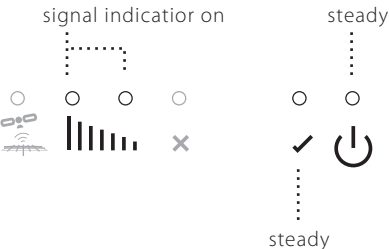
Configure your LAN Netmask. By default it is 255.255.255.0

Key in the Access Point Name (APN) from your Service Provider. It's something like "telstra.internet" or "tmobile".

Key in the Username and Password and PIN (if required) of your SIM card issued by your Service Provider.

YOU SHOULD SEE

The 'power indicator' on and the 'yes indicator' flashing steadily.



QUICK START
GUIDE

STEP 5 OF 7

RESTART THE
NETWORK

When you have finished updating your quick start settings, click onto the **Management** tab.

You need to restart the network In order for the FATBOX to establish the changes.

You can do it simply by clicking the **Reboot Router** tab here.



FATBOX G1

MENU OPTIONS

Quick Start
LAN
3G
Port Forwarding
Dynamic DNS
Management
System Status
Logout

System settings

Username
Password

Key in your new
Username

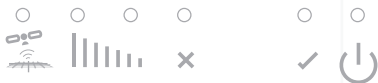
You can also customize
your own login profile
on the **Management**
Page.

Key in your new
Password

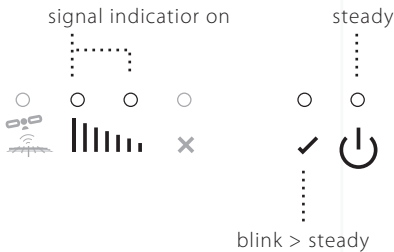
Remember to keep a
record of your changes
where you can refer to
later.

YOU SHOULD SEE

Your connection will
drop and reset. You
should see your FATBOX
power down.



As your connection
resets The power LED
will come on and your
'YES' Indicator will blink
first and then flash
steadily. Your signal
indicators will also be
on to indicate the
strength of your signal.

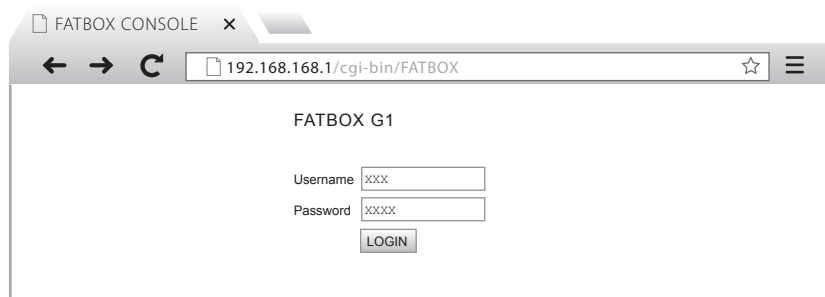


QUICK START GUIDE

STEP 6 OF 7

REVIEW YOUR CHANGES

Your session may time out as your network resets. Hence to review your changes you will need to access the web console again at "**192.168.168.1**". Login with the Username and Password that you have set.

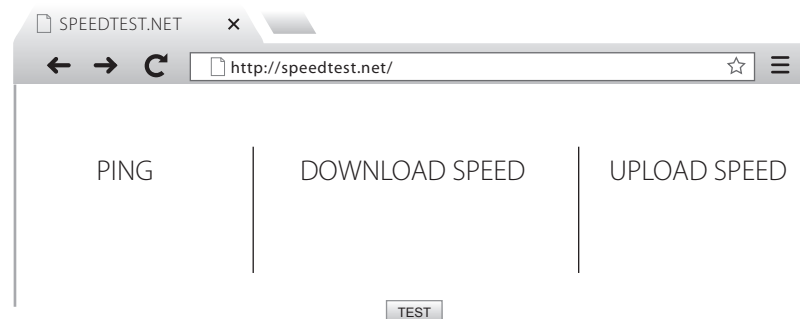


Your new changes should be reflected in the **Quick Start** Menu.

STEP 7 OF 7

TEST THE CONNECTION

You can test the speed of your connection on <http://www.speedtest.net/>



Congratulations! Your FATBOX is now set up.

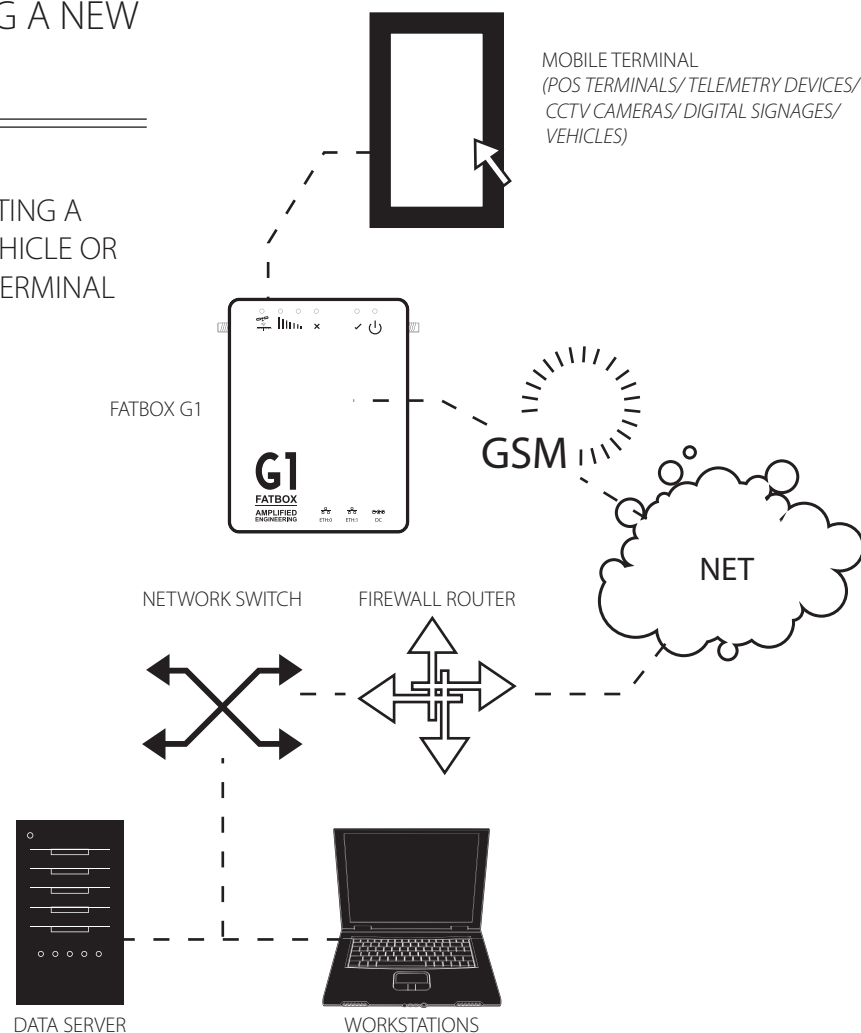
*The speed of the connection is dependant on the telco.

CONFIGURING
THE FATBOX

ADDING A NEW DEVICE	ISSUE DEVICE A LOCATION	MAKE FATBOX FINDABLE	UPDATE LAN SETTINGS	ADVANCED 3G MANAGEMENT
CONNECT UP	PORT FORWARDING	DYNAMIC DNS	CUSTOMIZE YOUR NETWORK	MORE CONNECTION OPTIONS
For users who need the FATBOX to hook up to remote terminals or devices, this guides you inthe connection and set up of your devices.	Whenever you connect a new device to your FATBOX you want to tag its applications to a specific port so that other devices can locate it later.	Unless you have both a static and public IP address, your devices can not be found from the world wide web. Services like Dynamic DNS (DDNS) helps resolve the issue by tracking public IP addresses.	Do you need to configure your network settings? Customise settings such as your default Gateway and DNS server here.	The reliability of your FATBOX connection can be toggled up or down to either increase the robustness of the network or create more economical settings.
14 ⋮ 15	16 ⋮ 17	18 ⋮ 19	20 ⋮ 21	22 ⋮ 23

ADDING A NEW DEVICE

CONNECTING A KIOSK, VEHICLE OR MOBILE TERMINAL



MORE NETWORK DIAGRAMS CAN BE FOUND ON
<http://amplified.com.au/>

YOU NEED TO PREPARE

Your router's internal IP address

This is typically the same as the "default gateway" from the above information.

Your router's public IP address

You can find this by visiting www.whatismyip.com

Your router's username and password

If you do not know this information, you will need to look in your product manual or contact your network administrator or internet service provider.

Your network's subnet mask

*You can also find these under **Control Panel>Network Connections>Local Area Connection (or your network adapter's name)>Properties>Internet Protocol (TCP/IP) Properties.***

Your product's username and password

You will need the administrative username and password for your product so that you can log into it and make changes.

Existing forwarded ports or NAT entries from your router

You need know your existing port forward and/or NAT settings before adding new ones in order to avoid conflicts. If you use point of sales software on your network you should call your vendor and make CERTAIN you have the settings and know how to avoid creating conflicts with them. Failing to do so could threaten your ability to create new transactions for a significant period of time.

The default ports that your product uses.

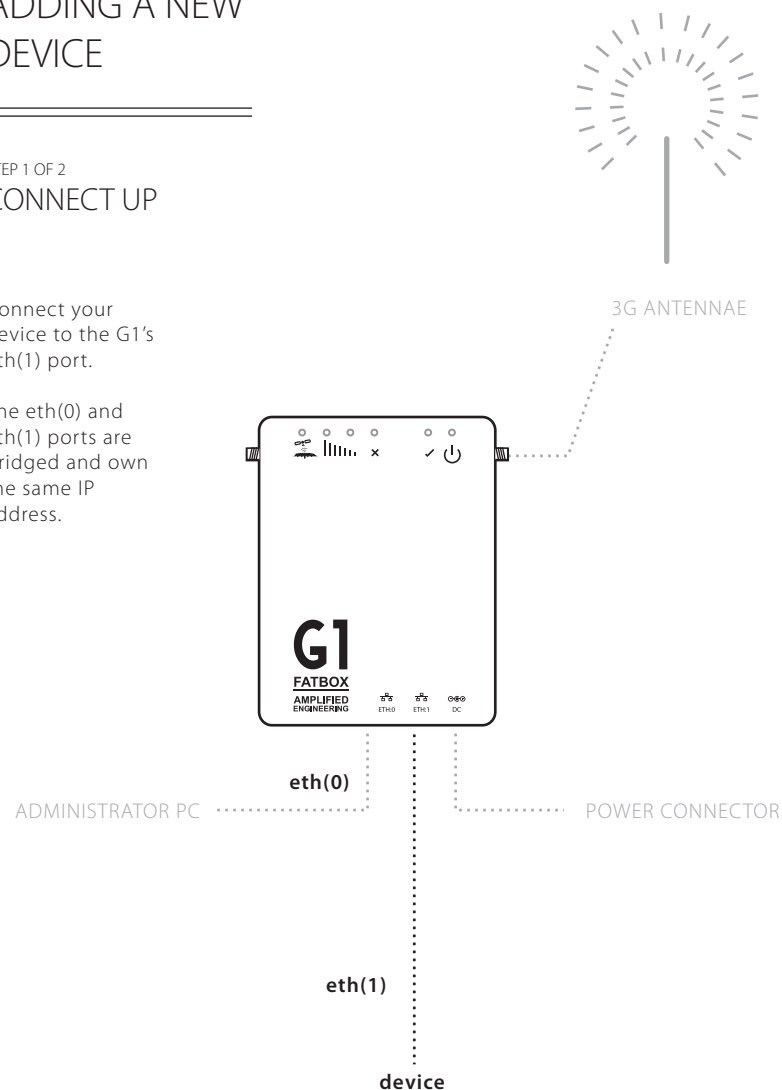
You can find the default ports that your product uses in your usual manual.

ADDING A NEW DEVICE

STEP 1 OF 2 CONNECT UP

Connect your device to the G1's eth(1) port.

The eth(0) and eth(1) ports are bridged and own the same IP address.



STEP 2 OF 2 LOG IN

Wait for a few moments for your computer to register the device then open up your web browser (we recommend using Firefox or Chrome).

Access the web console at "**192.168.168.1**". (We advise users to turn off their laptop's wireless connection to avoid the chance of any clashes in IP addressing during the log in process).



Login with the Username and Password that you have set.

If your device runs an application/applications, the next thing you have to do is to issue these applications with a specific address (or port) in the network.

ISSUE DEVICE A LOCATION

STEP 1 OF 3
PORT
FORWARDING

Whenever you connect a new device to your FATBOX you want to tag its applications to a specific port so that other devices can locate it later.

To set this go to the tab titled **Port Forwarding** on your left menu.

In the **Port Forwarding** menu you can also see a list of the other devices tagged to the FATBOX in the given table.

FATBOX G1

MENU OPTIONS

Quick Start

LAN

3G

Port Forwarding

Dynamic DNS

Management

System Status

Logout

Port Forwarding

Add a new Port Forwarding Rule

Source Port

Destination LAN IP Address

Destination Port

Service

TCP and UDP

tcpudp

Add

Could take up to 5 secs

Click to update settings to router.
A reboot will be required for
updated settings to take effect.

Current Port Forwarding Rules				
Index	Source Port	Destination IP	Destination Port	Protocol
01	800	192.168.168.2	80	UDP and TCP
02	1000-1200	192.168.168.3	1300-1400	UDP

Please consult with the device manufacturer for details on what port(s) should be forwarded. Some devices require more than one port to be forwarded in order for you to obtain all the features it has to offer.

For users who want DMZ, you can key in '0-65535' in this option.

Key in the IP address of your device connecting to the FATBOX.

Key in the port number of the application in your connecting device. The range of ports here must be the same as the source.

Select a Protocol to be used for your device. Common options found are UDP, TCP or Both. In most cases you will need to select the protocol option "TCP and UDP". This will associate both protocols to the port(s) being forwarded.

For Example:

In the first example, if you access port 800 on the Fatbox [192.168.168.1:800], it will be directed to port 80 at the device that holds the IP address of 192.168.168.2 [192.168.168.2:80].

The second example displays how a range of destination ports (1300-1400) on a device with IP address 192.168.1.3 can be accessed with a range of ports (1000-1200) on the FATBOX G1.

ISSUE DEVICE A LOCATION

STEP 2 OF 3 REBOOT ROUTER



To save and implement your Port Forwarding settings you must restart the network. Go to the **Management** tab and click on the **Reboot Router** button.

Your connection will drop and reset again with your new settings in place.

MENU OPTIONS

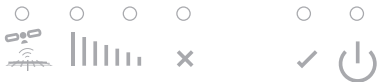
Quick Start
LAN
3G
Port Forwarding
Dynamic DNS
Management
System Status
Logout

System settings

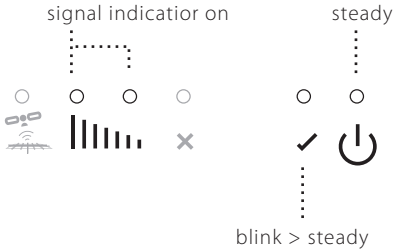
Username
Password

YOU SHOULD SEE

Your connection will drop and reset. You should see your FATBOX power down.



As your connection resets The power LED will come on and your 'YES' Indicator will blink first and then flash steadily. Your signal indicators will also be on to indicate the strength of your signal.



STEP 3 OF 3 TESTING FROM INTERNAL NETWORK (LAN)

Open your internet browser and enter the IP address that you assigned to your product. You should be looking at the login or default screen for your product. Make sure to include the web server port (If something other than port 80) you have assigned to you have your product.

For example, if your product uses port 81 for its web server and has an IP address of 192.168.168.50, you would browse to

http://192.168.168.50:81.



Now that your device can be located within your network, the next thing to ensure is that it can be found on the World Wide Web (www). Unless you have a Public *and* Static IP address from your service provider you will need to use a Dynamic DNS service found in the next page.

MAKE FATBOX FINDABLE

STEP 1 OF 3

AUTOMATED IP TRACKING

A Static and Public IP address is essential to getting your FATBOX contactable from the World Wide Web (www).

Please ensure that the SIM card you obtain has a *Public* and not a *Private* IP.

Also, Public IP addresses are severely limited so most operators often issue Public IPs that are *dynamic* (changing) rather than *static*. If that is the case, it's not a problem.

The FATBOX can be configured to run a DDNS service that automatically tracks dynamic Public IP addresses to create a similar condition as a Static and Public IP.

FATBOX G1

MENU OPTIONS

- Quick Start
- LAN
- 3G
- Port Forwarding
- Dynamic DNS**
- Management
- System Status
- Logout

Dynamic DNS Settings

Enable ☐ 0- Disabled ☒ 1- Enabled

DNS Service Username

DNS Service Password

Click to update settings to router.
A reboot will be required for
updated settings to take effect.

Key '1' here to enable a dynamic DNS capability

Key in your DNS Service Username

Key in your DNS Service Password

MAKE FATBOX FINDABLE

STEP 2 OF 3
REBOOT ROUTER



To save and implement your Dynamic DNS settings you must reboot the router. Go to the **Management** tab and click on the **Reboot Router** button.

Your connection will drop and reset again with your new settings in place.

MENU OPTIONS

System settings

Quick Start

LAN

3G

Port Forwarding

Dynamic DNS

Management

System Status

Logout

Username

xxx

Password

xxxxx

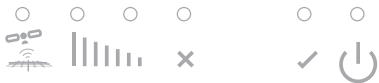
Update

Factory Reset

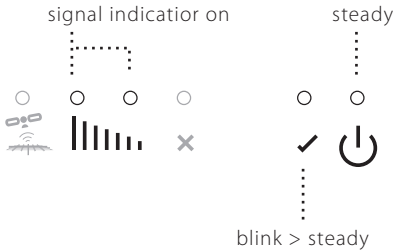
Reboot Router

YOU SHOULD SEE

Your connection will drop and reset. You should see your FATBOX power down.



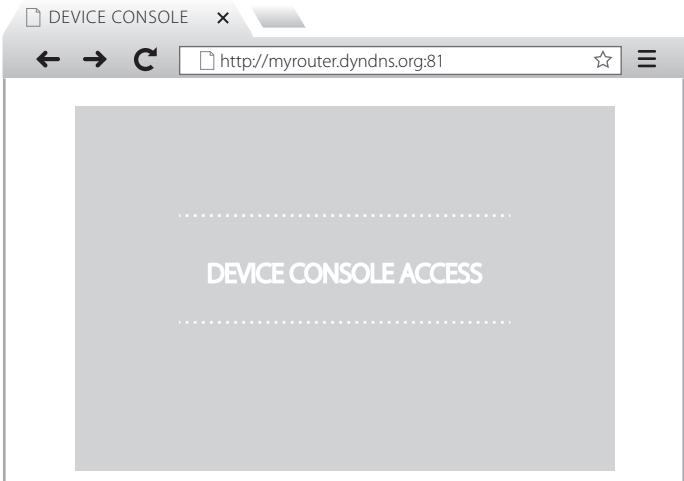
As your connection resets The power LED will come on and your 'YES' Indicator will blink first and then flash steadily. Your signal indicators will also be on to indicate the strength of your signal.



STEP 3 OF 3
TESTING FROM WAN (INTERNET)

You should be able to substitute your registered DNS address for your internal one (see your information gathering checklist) from a PC outside your network (Viewing a product at your office from home or vice-versa) and achieve the same result.

For example, if your DNS Service is registered under **myrouter.dyndns.org** and your product uses port **81** for its web server, you would browse to



<http://myrouter.dyndns.org:81>.

UPDATE LAN SETTINGS

STEP 1 OF 3
CUSTOMIZE
YOUR
NETWORK

Do you need to
configure your network
settings? Customise
settings such as your
LAN IP Address and LAN
Netmask here.



IMPORTANT:

Whilst you are configuring
the LAN settings, ensure
that your new settings do
not clash with any other
address set in your
network.

FATBOX G1

MENU OPTIONS

- Quick Start
- LAN**
- 3G
- Port Forwarding
- Dynamic DNS
- Management
- System Status
- Logout

LAN (eth0) Port Settings

LAN IP Address	192.168.168.1	xx:xx:xx:xx:xx:xx
LAN Netmask	255.255.255.0	xx:xx:xx:xx:xx:xx
eth0 MAC	1c:bd:0e:21:00:00	xx:xx:xx:xx:xx:xx
eth1 MAC	1c:bd:0e:21:00:01	xx:xx:xx:xx:xx:xx
Update		

Click to update settings to router.
A reboot will be required for
updated settings to take effect.

Configure your LAN IP Address. By default the
address is 192.168.168.1

Configure your LAN Netmask. By default it is
255.255.255.0

The MAC of your eth0 port will be entered for you. If
you require to edit it you can do so in this menu.

The MAC of your eth1 port will be entered for you. If
you require to edit it you can do so in this menu.

UPDATE LAN SETTINGS

STEP 2 OF 3 REBOOT ROUTER



To save and implement your Port Forwarding settings you must restart the network. Go to the **Management** tab and click on the **Reboot Router** button.

Your connection will drop and reset again with your new settings in place.

MENU OPTIONS

System settings

Quick Start

LAN

3G

Port Forwarding

Dynamic DNS

Management

System Status

Logout

Username

Password

Update

Factory Reset

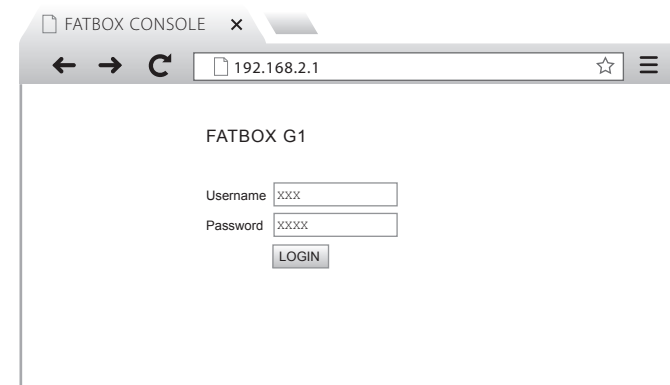
Reboot Router

STEP 3 OF 3 NEW LOGIN SETTINGS

To access the FATBOX web console now, type in the new LAN IP Address into your browser.

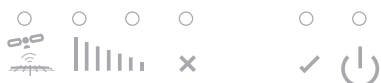
For example, if you set your new IP address as 192.168.2.1, you will now access your login page via the following address:

http://192.168.2.1

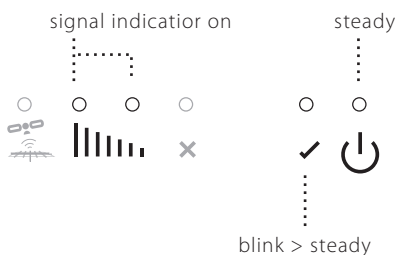


YOU SHOULD SEE

Your connection will drop and reset. You should see your FATBOX power down.



As your connection resets The power LED will come on and your 'YES' Indicator will blink first and then flash steadily. Your signal indicators will also be on to indicate the strength of your signal.



ADVANCED 3G MANAGEMENT

STEP 1 OF 2
**MORE
CONNECTION
OPTIONS**

CONNECTION
ROBUSTNESS

For applications that need greater fail-safe reliability, functions like **PPP Keep alive, Enable Reboot & PING retries** lets you toggle the robustness of your connections.

FATBOX G1

MENU OPTIONS

Quick Start
LAN
3G
Port Forwarding
Dynamic DNS
Management
System Status
Logout

3G/HSPA Cellular Settings

APN	your_apn
Username (PAP/CHAP only)	
Password (PAP/CHAP only)	
SIM PIN Code (if required only)	
Advanced Settings	
Dial Number	#99
Service	UMTS Preferred Current: umts
Assigned DNS	
PPP Keepalive	5 no. of connection failures before reconnection
Enable Reboot on Ping failure	0 1=enable 0=disable
Remote PING Host IP address	www.google.com
PING Retry Time Period (s)	15
PING retries	4
Update	

Click to update settings to router.
A reboot will be required for
updated settings to take effect.

Enter in the dial number provided for by your Service Provider.

You can choose the FATBOX to restrict operation on only select protocol of either UMTS or GPRS. The 'UMTS Preferred' option allows the FATBOX to run both protocols however the box will go with UMTS if it is available.

Assign your own DNS that overrides the one set by your network

For more robust or reliable connection the FATBOX can be configured to automatically reconnect

For more robust or reliable connection the FATBOX can be configured to reboot itself upon PING failure

Enter in a PING destination (eg. www.google.com) here

This sets the time in between each PING retry

If there are this number of PING failures, the FATBOX will reboot and attempt to re-establish a connection

ADVANCED 3G MANAGEMENT

STEP 2 OF 2
REBOOT ROUTER



To save and implement your Dynamic DNS settings you must reboot the router. Go to the **Management** tab and click on the **Reboot Router** button.

Your connection will drop and reset again with your new settings in place.

MENU OPTIONS

System settings

Quick Start

LAN

3G

Port Forwarding

Dynamic DNS

Management

System Status

Logout

Username

Password

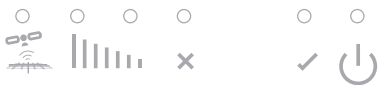
Update

Factory Reset

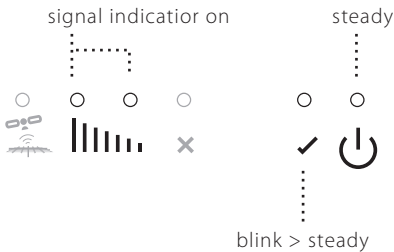
Reboot Router

YOU SHOULD SEE

Your connection will drop and reset. You should see your FATBOX power down.

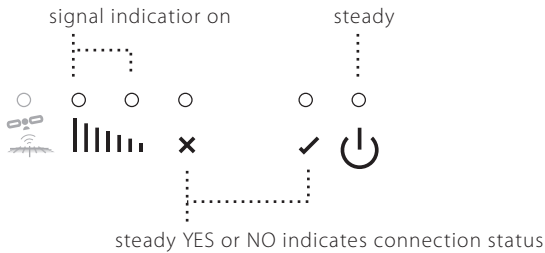


As your connection resets The power LED will come on and your 'YES' Indicator will blink first and then flash steadily. Your signal indicators will also be on to indicate the strength of your signal.

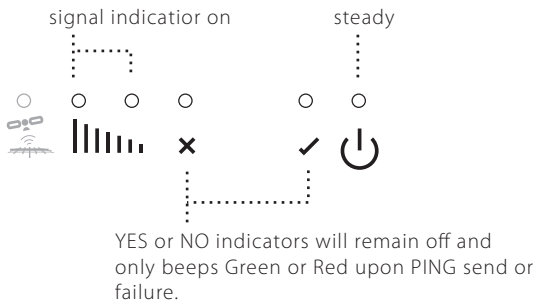


A NOTE ON AUTOPING

If you did not enable AUTOPING, the green *yes* and red *no* are indication of your connection. (Note that having a green *yes* shows a live connection but this is different from being able to PING through).



If you enabled AUTOPING the YES and NO indicators will remain off and only beep green or red upon a send or a failure to PING.



SAFETY



SAFETY

ALL CONDITIONS

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.

POWER SET UP

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

SIM CARD

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.

CONFIGURING THE
ROUTER

Do not reboot/power-down the device until the writing process is acknowledged as completed.



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