



THE MANUAL

Creating quick, versatile & robust connectivity using cellular networks.

EDITION 01.1 / FEBRUARY 2016

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

CONNECT YOUR OFFICE

Remote or Temporary office Set Ups

SET UP INSTRUCTION

QUICK START GUIDE	pages 6-12
LAN SETTINGS	pages 20-21
3G SETTINGS	pages 22-23

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

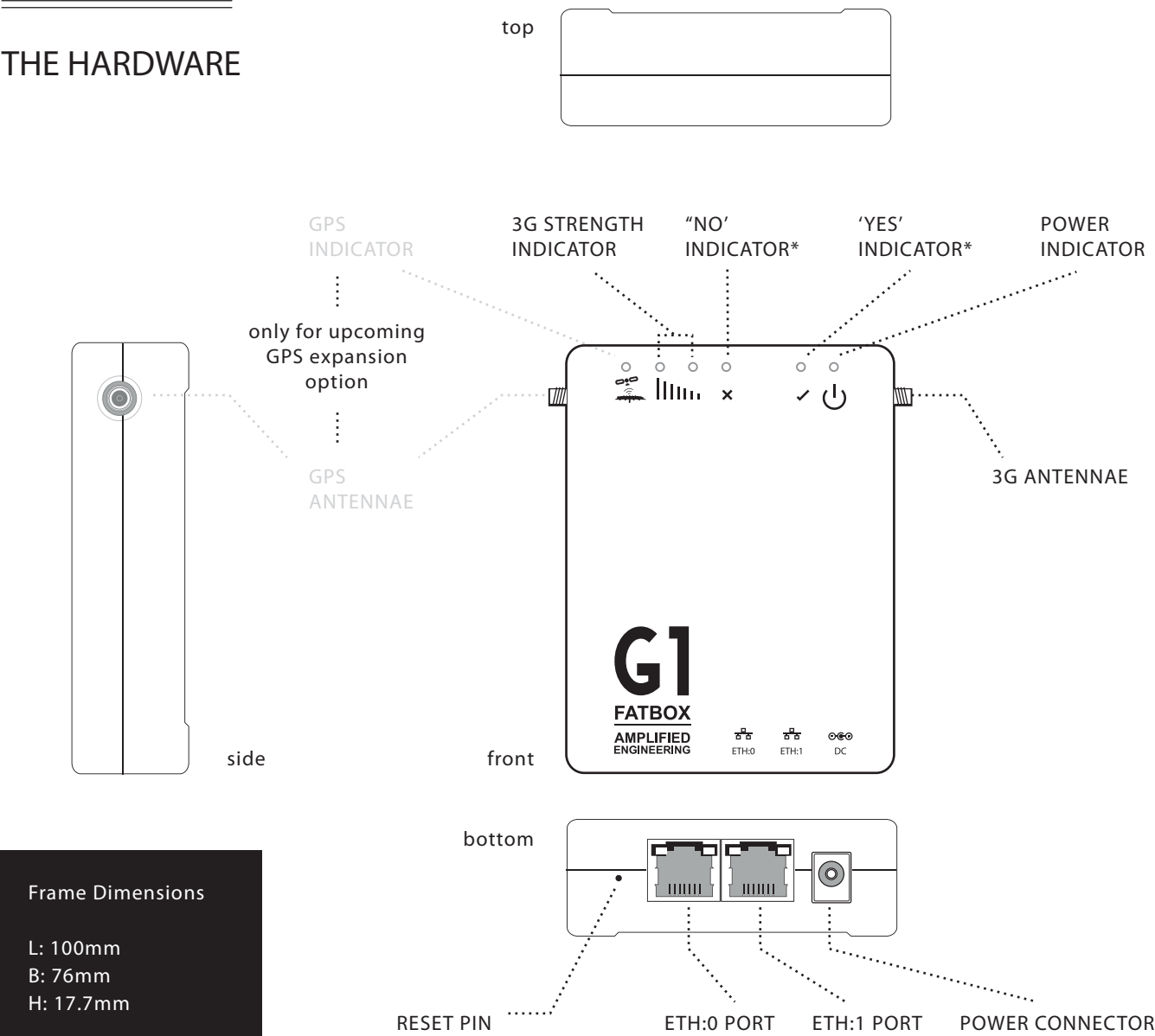
Digital Signages
Unmanned Vehicles

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

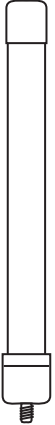
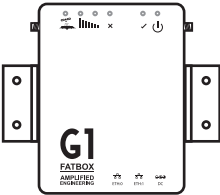
	green	Device powered up
	green	'Yes' Status
	red	'No' Status
	yellow	Connection poor
	green	Connection good
	N.A	N.A

POWER & OPERATING CONDITIONS

POWER	12-24VDC @ 0.3-0.15A nominal 110-230VAC power adaptor provided
OPERATING TEMPERATURE	In casing -0°C to +40°C
	On board level -0°C to +50°C

ABOUT

UPGRADES

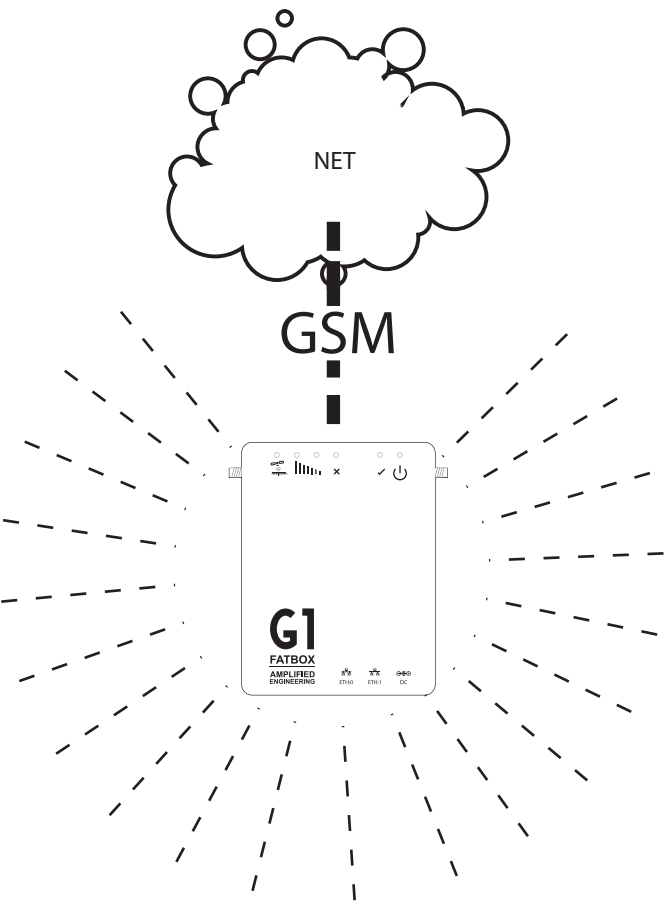
G1 UPGRADE OPTIONS	
ANTENNAE	<p>Base Station Antenna</p>  <p>Frequency 800/900/1800/1900/2100 MHz</p> <p>Max Power 50W</p> <p>Impedence 50Ohm</p> <p>Polarization Vertical</p> <p>Height 477mm +10</p> <hr/> <p>OTHER OPTIONS</p> <p>Cable Length 1) 50cm or 2) 200cm</p> <p>Mounting 1) Wall Mount or 2) Pole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

TECHNICAL SPECIFICATION

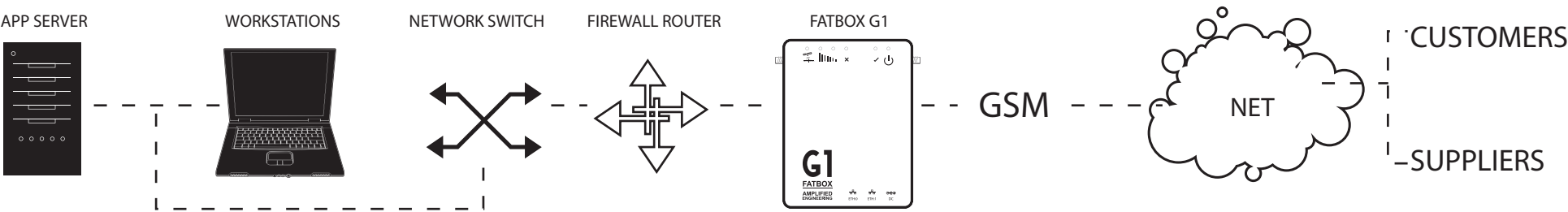
Operating System	<ul style="list-style-type: none"> - Linux 3.3.X running on Qualcomm Atheros 400MHZ MIPS32 CPU - Firmware upgrade over Ethernet TCP
Wireless Cellular Interface	<ul style="list-style-type: none"> - HSDPA 7.2M downlink and 384K uplink (850/1900/2100) - EDGE and GPRS Class 12 (850/900/1800/1900) - RX Diversity on HSDPA/UMTS (850/2100)
LAN Interface	<ul style="list-style-type: none"> - 2 x 10/100BaseT (Bridged with DHCP server)
Networking Functions	<ul style="list-style-type: none"> - 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

QUICK START
GUIDE

ESTABLISH A
CONNECTION



Eg. For office ADSL backup



QUICK START
GUIDE

WHAT YOU'LL NEED

IN THE BOX



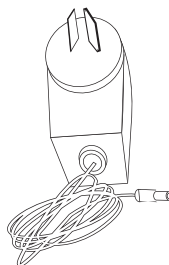
FATBOX



SCREWDRIVER



CAT5 CABLE



POWER CABLE

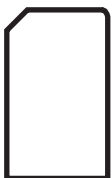


ANTENNAE

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



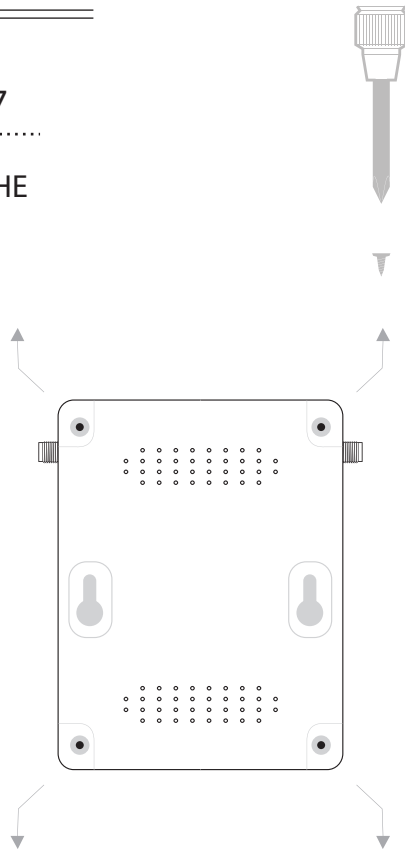
ADMINISTRATOR PC

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.

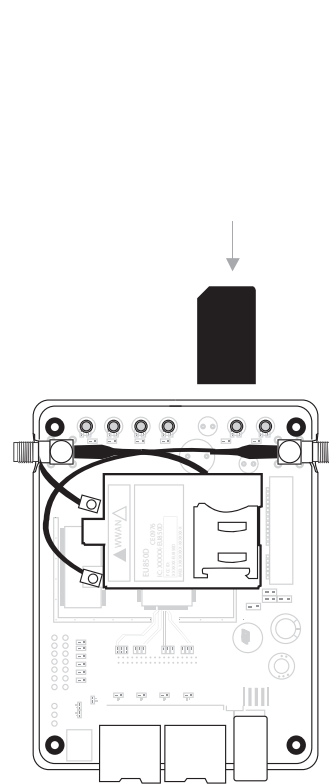
QUICK START GUIDE

STEP 1 OF 7

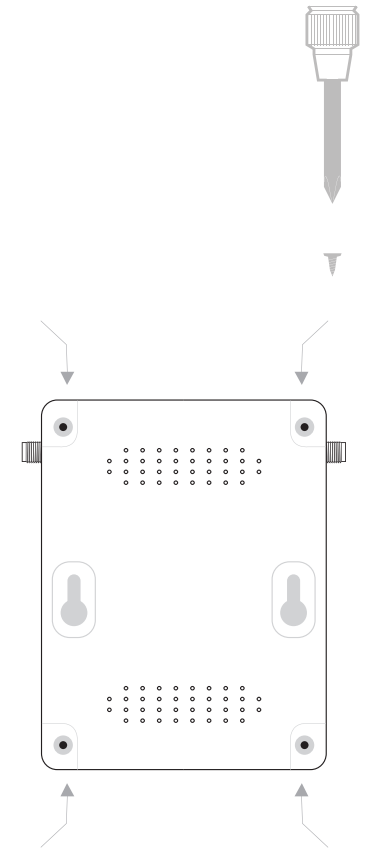
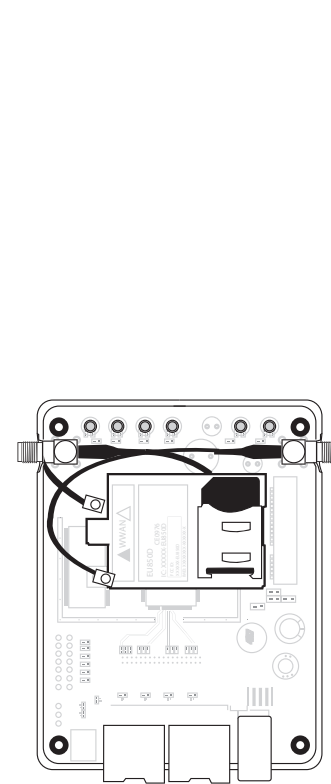
INSERTING THE SIM CARD



Remove the screws on the bottom of the casing.



Insert your SIM card into the mount provided.



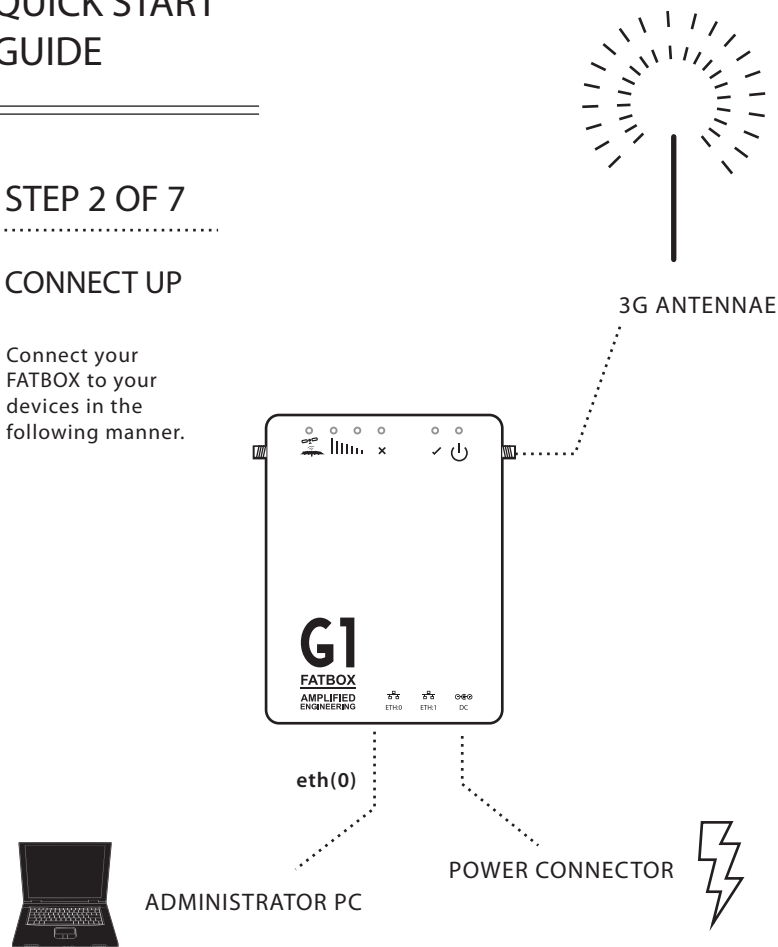
Firmly screw the casing back.

QUICK START GUIDE

STEP 2 OF 7

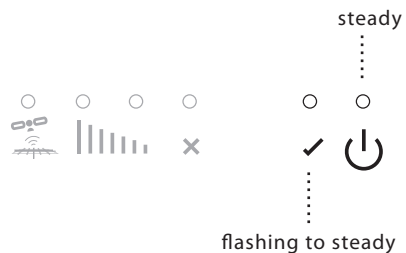
CONNECT UP

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: **fatbox12345** (note: the password may be **12345** in some boxes)

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) Port Settings

LAN IP Address

LAN Netmask

Default Gateway

DNS Server

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

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

Enter in the IP Address of your default gateway.

Enter in the IP Address of your DNS Server.

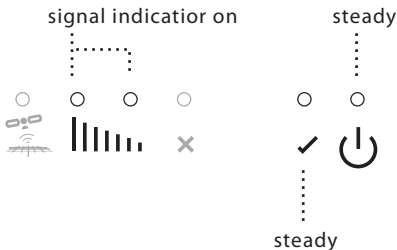
Key in the Access Point Name (APN) from your Service Provider. It's something like "telstra.internet" or "tmobile".

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

When you are happy with your settings click here.

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 System settings

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

Username
Password

Key in your new Username

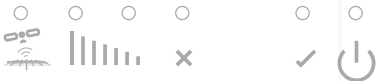
You can also customize your own login profile on the **Management** Page.

Key in your new Password

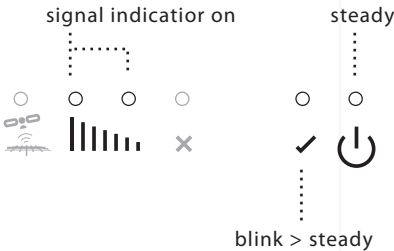
Remember to keep a record of your changes where you can refer to later.

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.

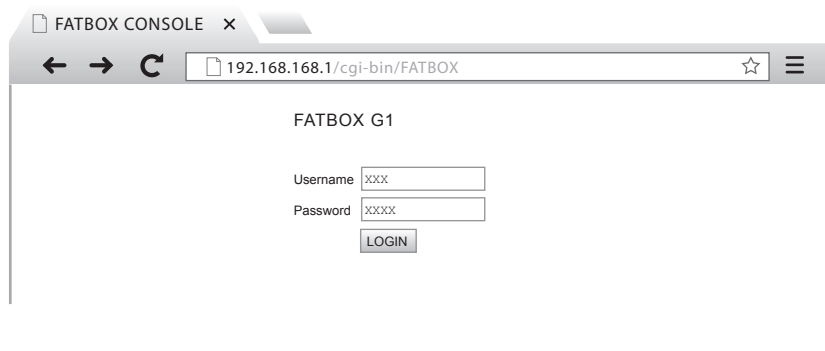


QUICK START GUIDE

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.

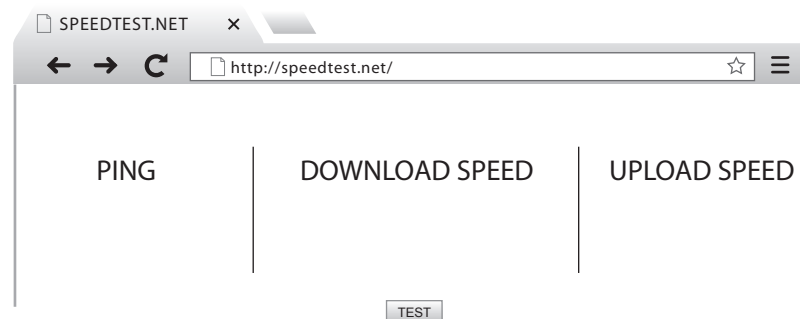


Your new changes should be reflected in the **Quick Start** Menu.

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

CONNECT UP

For users who need the FATBOX to hook up to remote terminals or devices, this guides you in the connection and set up of your devices.



ISSUE DEVICE A
LOCATION

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.



MAKE FATBOX
FINDABLE

DYNAMIC DNS

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.



UPDATE LAN
SETTINGS

CUSTOMIZE YOUR
NETWORK

Do you need to configure your network settings? Customise settings such as your default Gateway and DNS server here.



ADVANCED 3G
MANAGEMENT

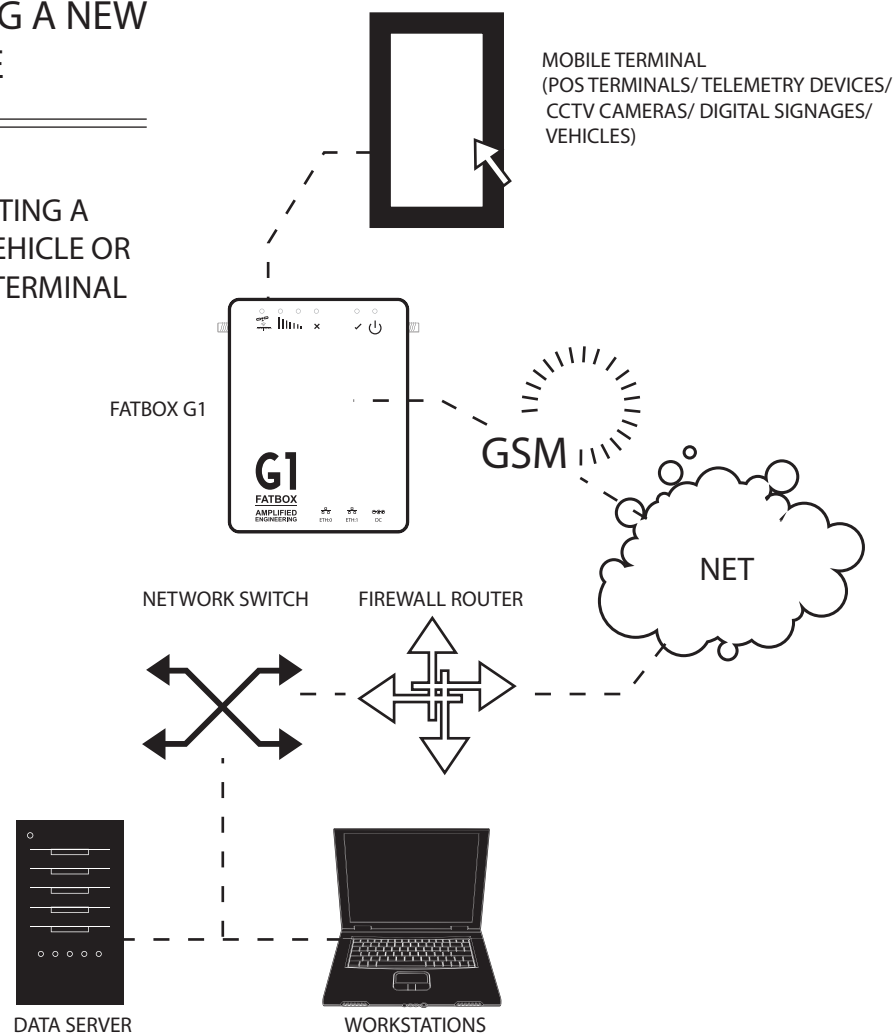
MORE CONNECTION
OPTIONS

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.



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 informa-

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.

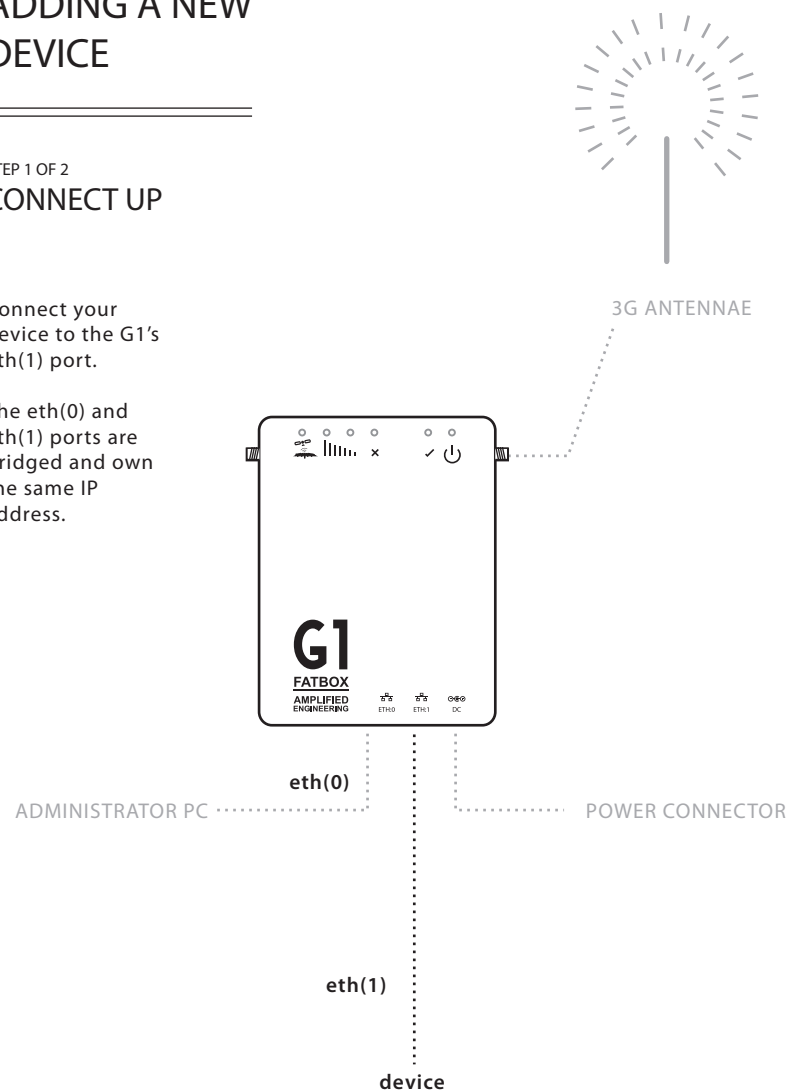
You can find the default ports that you product uses in your usual manual.

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 Port Forwarding

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

Add a new Port Forwarding Rule

Source Port

Destination LAN IP Address

Destination Port

Service

Single Port: XXX or Rang of Ports: XXX-XXX

TCP and UDP

Add

Current:

When you are
happy with your
settings click here.

Please consult with the device manufacturer for details on what port(s) should be forwarded. Some devices require more then 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.

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 given example, if you access port 80 on the Fatbox [192.168.168.1:80], it will be directed to port 81 at the device that holds the IP address of 192.168.168.2 [192.168.168.2:81].

Current Port Forwarding Rules

Index	Source Port	Destination IP	Destination Port	Protocol
01	80	192.168.168.2	81	UDP and TCP

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

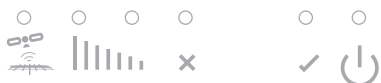
System settings

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

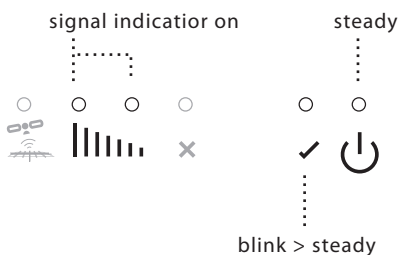
Username
Password

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.

G1 PORT FORWARDING GUIDE END.

MAKE FATBOX FINDABLE

STEP 1 OF 3

THE UPDATED POSTMAN SERVICE

Chances of getting a Static and Public IP address are rare. But without one it would not be possible to find your devices from the world wide web (www).

If a Public IP is available, Dynamic DNS (DDNS) Services like dyndns.org helps to assign and track a temporary IP to your unique domain name.

The service can be registered at

<http://dyn.com/>

The FATBOX can be configured to run a DDNS service.

FATBOX G1

MENU OPTIONS

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

Dynamic DNS Settings

Enable	<input type="radio"/> 0- Disabled <input checked="" type="radio"/> 1- Enabled
DDNS Service Used	<input type="text"/>
Host Name	<input type="text" value="your_host.dyndns.org"/>
DNS Service Username	<input type="text" value="your_username"/>
DNS Service Password	<input type="text" value="your_password"/>
	<input type="button" value="Update"/>

When you are
happy with your
settings click here.

Key '1' here to enable a dynamic DNS capability

Enter in your DDNS server (eg. dyndns.org)

Enter in the host name with which you have registered the DDNS service (eg. myrouter.dyndns.org)

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

Password

Update

Factory Reset

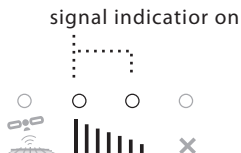
Reboot Router

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.



signal indication on
blink > steady

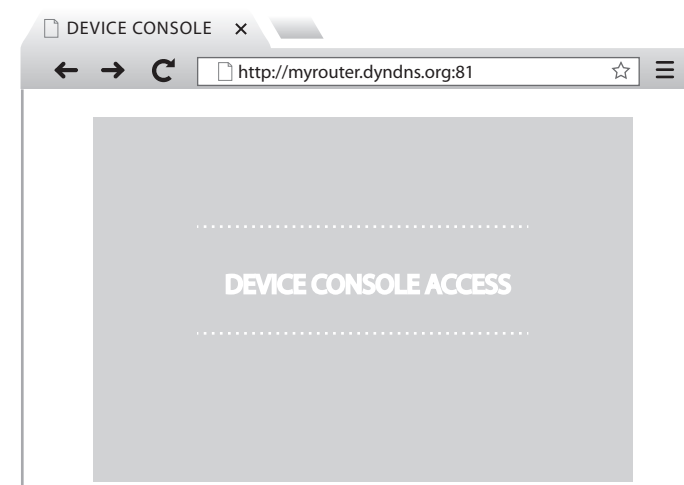
STEP 3 OF 3

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>.



G1 DYNAMIC DNS GUIDE END.

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 configur-
ing 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

LAN Netmask

Update

When you are
happy with your
settings click here.

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

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

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

System settings

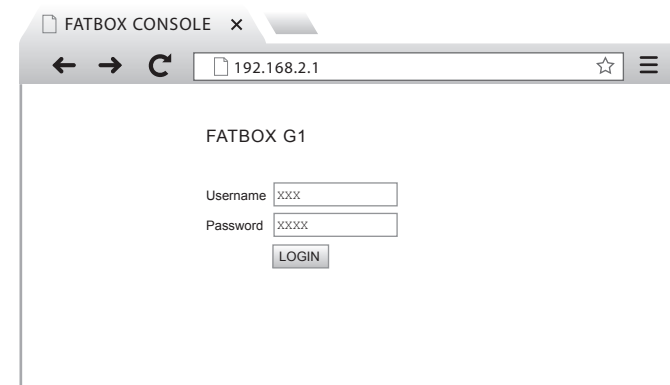
Username
Password

STEP 3 OF 3 NEW LOGIN SETTINGS

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

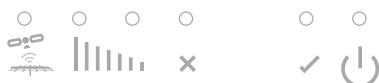
For example, if you set your new IP address as 192.168.2.1, you will now access your login page via the following address:

http://192.168.2.1

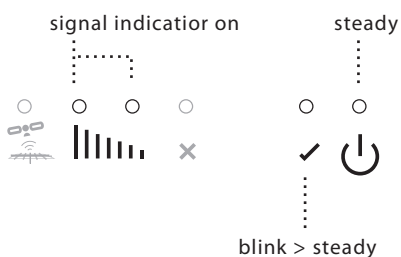


YOU SHOULD SEE

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

FATBOX G1

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.

COST EFFICIENCIES

The **On demand** function allows you to restrict connection to only the times you need it, thus reducing the cost and data transferred.

MENU OPTIONS		3G/HSPA Cellular Settings	
Quick Start		APN	<input type="text" value="your_apn"/>
LAN		Username (PAP/CHAP only)	<input type="text"/>
3G		Password (PAP/CHAP only)	<input type="text"/>
Port Forwarding		SIM PIN Code (if required only)	<input type="text"/>
Dynamic DNS Management			
System Status			
Logout			
	Advanced Settings		
	Service	<input type="text" value="UMTS Preferred"/> Current: umts	
	Default Route	<input type="text" value="1"/> To replace default route on PPP	
	Assigned DNS	<input type="text"/>	
	PPP Keepalive	<input type="text" value="5"/> no. of connection failures before reconnection	
	On demand	<input type="text"/> no. of secs of inactivity to disconnect	
	Enable Reboot on Ping failure	<input type="text" value="0"/> 1=enable 0=disable	
	Remote PING Host IP address	<input type="text" value="www.google.com"/>	
	PING Retry Time Period (s)	<input type="text" value="15"/>	
	PING retries	<input type="text" value="4"/>	
		<input type="button" value="Update"/>	

When you are happy with your settings click here.

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.

Enter '1' to configure your FATBOX to replace a default route on PPP

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

To lower costs, the FATBOX can be configured to disconnect upon a stated time of inactivity

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

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

System settings

Username

Password

Update

Factory Reset

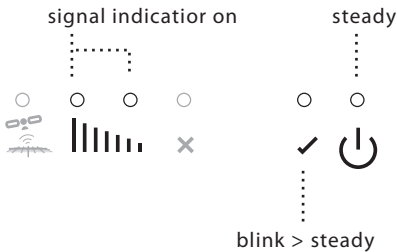
Reboot Router

YOU SHOULD SEE

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

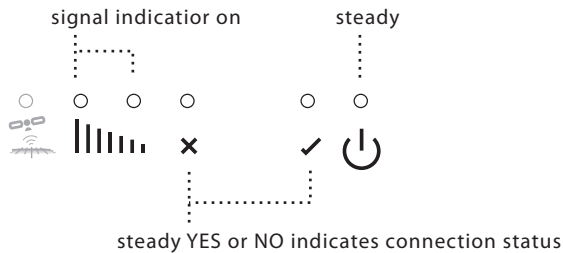


As your connection resets The power LED will come on and your 'YES' Indicator will blink first and then flash steadily. Your signal indicators will also be on to indicate the strength of your signal.

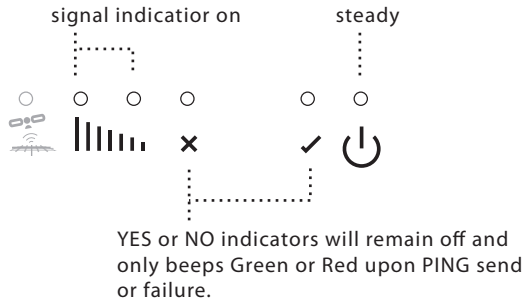


A NOTE ON AUTOPING

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.



THE CONTACT

Website: amplified.com.au

Email: support@amplified.com.au

Address: Amplified Engineering Pty Ltd
No. 5 Turner Ave, Unit 1
Bentley Technology Park Bentley,
Western Australia 6102
AUSTRALIA