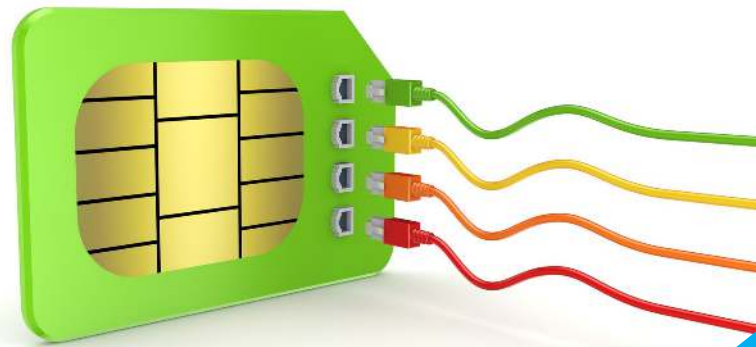


# Broadband Bonding

## Fusion Bonded Hybrid



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Fusion Broadband has been supplying businesses with bonded broadband services for close to five years now. We'd like to think that after all that time, we know quite a bit about bonding and how businesses use our Bonded connections.

What we do know is that businesses are very downlink centric\*, meaning they generally download much more data than they upload. This ratio is perfect for ADSL which nearly all business have as their main Internet connection type. ADSL is low cost and provides excellent download speeds (producing very low data expenses). The main penalty with ADSL however, is the very slow uplink speed. Business generally don't need large volumes of data in the uplink direction, they just need the upload speed.

## What is Fusion Bonded Hybrid?

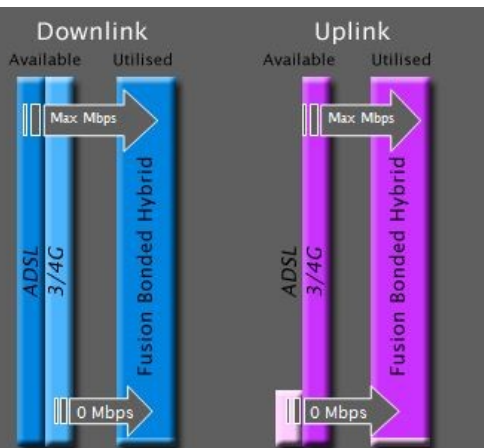
Fusion Bonded Hybrid is the ultimate business broadband connection where we blend an ADSL connection with a wireless connection to create a synchronous service^ without the cost that comes with provisioning and running a SHDSL (Ethernet) service.

## How does it Work?

We deliberately bias the data flows of the traffic to force close to 100% of your download volume to the low cost ADSL connection and close to 100% of the upload volume to the 3/4G connection. Generally speaking, we don't limit the upload capacity of your ADSL service. And we like to have a small trickle of download data through your 3/4G service also (usually less than 0.1Mbps).

## Data Usage

By analysing the data flows through our network over the past 5 years we have learned that uplink accounts for around 20% of the data most businesses use on average.



The Fusion Hybrid Bonder uses 100% of the ADSL downlink speed and 100% of the 3/4G uplink speed.

3/4G downlink and ADSL uplink speeds are cut to zero creating a true hybrid bonding service.

*\* not to scale*

With that in mind, a standard 100GB ADSL service coupled with a 25GB mobile data plan will suit a large majority of business users wanting to improve their uplink speeds.

Your data costs are controlled and more manageable as the downloads are carried by the ADSL connection and the uploads are carried by the 4G service. Given our network's data flow statistics show an 80/20 split in downloads versus uploads, a 100GB ADSL (download) data plan fits very well with a 25GB 4G (upload) data plan!

## What else does Bonded Hybrid do for me?

In addition to a synchronous service we also provide you with a static IP address, Data Compression, advanced end to end Quality of Service (QoS) and our TCP Acceleration algorithms to give you the perfect broadband connection.

Fusion Bonded Hybrid combines bandwidth of both technologies on a single TCP flow supporting ALL applications and ALL protocols. VPN's RDP, Web traffic, email - everything.

## Is it hard to install Fusion Bonded Hybrid?

It couldn't be much easier! You connect your ADSL service into the Fusion Bonder, insert your 3/4G service (USB or Ethernet from any carrier - Telstra, Optus, Vodafone) into the Bonder. Connect your Business router, tell your router your new Bonded Public IP address and you're off. Fast, highly redundant business broadband made active in a minute! No additional lines to be installed. No onsite techs to visit.

## Case Study

Fusion Broadband has a client based in Brisbane who needed greater uplink capacity as their single ADSL2+ service lacked the uplink speed it needed to operate their business effectively.

Their downlink speed, whilst not super-fast, was adequate at 11Mbps and the uplink was around 0.75 Mbps (750kbps). Bonding a second ADSL service would give them a solid downlink boost (to around 20Mbps) but wouldn't give them the huge increase in uplink they needed for their remote users. They chose to use Fusion Bonded Hybrid.

Our client bought a 25GB 4G service from a local carrier and connected it along with their existing 100GB ADSL service through a Fusion Hybrid Bonder. We set the speeds of the lines to push all their downloads through their ADSL line and the uplinks through the 4G service. We also restricted the speed of the 4G service to 11Mbps so as keep their monthly data usage to around the 25GB SIM card plan limit.

Now, for the cost of a 25GB 4G service and our monthly bonding fees, they have a fully synchronous service that gives their remote users the speed boost they needed!

## Ookla Speed Test Results

Of course, you don't need to limit your speeds if it doesn't suit. You can take advantage of the maximum speed of each service if you desire.

In the *Ookla Speedtest.net* results shown below, we had the following settings for each of the broadband services:

- **ADSL leg set to:** 8 Mbps downlink and 0 Mbps Uplink
- **4G leg set to:** 0 Mbps downlink and 40 Mbps uplink

The results are shown with and without Fusion Broadband's Compression turned Off and On. Speedtest.net use a compressible file on the downlink test (not on the uplink test).

Compression Turned Off



<http://www.speedtest.net/my-result/4448320768>

Compression Turned On



<http://www.speedtest.net/my-result/4448323639>

## Provisioning Process

Once ordered the device is shipped and available generally on site only days after the order is accepted.

Fusion Broadband charges an ongoing monthly fee for the broadband bonding service for the term of the 12 month contract. You will be responsible for the cost of your ADSL service and the 3G/4G service.

The only requirement from Fusion Broadband is that your ADSL modem is placed into Full Bridge mode and that the router we hand off to has an Ethernet WAN port. A small configuration change is required to your router.

## What do you get?

Fusion Broadband will provide you with:

- The Fusion Bonded Hybrid hardware device.
- A new public static IP address.  
If your ADSL service charges for a static IP...feel free to cancel it. We can accept a dynamic IP address for your ISP.
- Speed!  
You will get the benefit of your ADSL downlink speed and the benefit of your 3G/4G Uplink speed.
- Bonded throughput in both directions, data compression, end-to-end Quality of Service, TCP Acceleration, carrier independence all available across the entire ADSL and cellular footprint in Australia.

## Will Fusion Bonded Hybrid work with any ISP/Carrier?

Yes. Fusion Bonded Hybrid relies on the ADSL and 3/4G services provided by your ISP/Carrier. The ADSL service does not need to be the same as your 3/4G service provider.

## What speeds can I get using Fusion Bonded Hybrid?

This is entirely dependant on the speeds provided by your carrier(s). The faster the service provided by your ISP, the faster your Bonded Hybrid service will operate at (our Compression technology can also help). Check out the speeds test charts above to give you an example of how compression can help.

## How much does it cost?

Pricing for Bonded Hybrid is available on our website and our [Online Shopping Cart](#).

Fusion Bonded Hybrid is available on a contract term and has a once-off setup fee and an ongoing monthly subscription for the bonding service. This service is only available for Credit Card holders.

You will be responsible for the supply and expense of both the ADSL service and the 3G/4G mobile data service.

## More than one site?

Connect your sites together in a simple to use Private Network using *Fusion PWAN* (our SD-WAN solution). For more information on how to use Fusion PWAN, please visit [www.fusionbroadband.com.au/PWAN](http://www.fusionbroadband.com.au/PWAN)

\* Analysing our network data over the last 4 years has shown that about 80% is downloads and 20% of data usage is uploads.  
^ A synchronous service depends on your ADSL and 4G speeds.

## Steps to customising your Fusion Bonded Hybrid

Category	Step	Description	Price	Notes
Once-Off	1	<b>Set Up Costs</b> All alterations, software upgrades and configuration changes are free of charge.	12 Months \$350.00	Credit Card Only
	2	<b>OPTION</b> ADSL Modem (TP Link TD-8817)	Each \$33.00	
Monthly	3	<b>Bonding Fees</b> 1xADSL with 1xUSB 4G	ADSL+4G \$99.00	
	4	<b>DATA</b> 250GB Included		
	5	<b>Included FREE</b> These included items can be turned on or off at anytime through the Fusion Bonding Portal	Data Compression \$0.00	Quality of Service (QoS) \$0.00
	6	<b>OPTION</b> Link Authentication	Link Authentication \$11.00	
	7	<b>OPTION</b> Additional Single IP Address	Each \$10.00	

### Before You Order

Before you order Fusion Bonded Hybrid, you should have an understanding of what speeds are possible from the bonded service. To do this, you should run a few speed tests as follows:

**ADSL** Using [Ookla speedtest.net](http://Ookla speedtest.net), run a number of speed tests throughout the day on your ADSL service taking note of the *Downlink* speed. It will vary depending on time of day but it should give you a rough idea of what to expect.

**3/4G** Using your mobile phone containing your chosen carrier's SIM card (and the [Ookla Speedtest App](#)) run a few speed tests throughout the day and take note of the *Uplink* speed.

**IMPORTANT:** Be sure to run the test from the location where the Bonder will be housed. There is little value running this test anywhere else as results will vary from office to office in your building.

These test results will give you an idea of the speeds that can be possible using Fusion Bonded Hybrid (without compression of course).

### How to Order

To order the *Fusion Bonded Hybrid*, please visit our website.

Alternatively, you can head directly to our secure online shopping cart and place an order there:

<https://www.fusionbroadband.com.au/cbms/cart.php?gid=28>

If Bonded Hybrid doesn't suit your needs, please review our other services:

*Fusion Bonded Premium* Bond up to 20 lines of any type from any carrier with a 4G USB failover option.

*Fusion nanoBonder* Bond two lines with all the functionality of Bonded Premium.

*Fusion nanoBonder Lite* Bond two lines with some limited functionality and a reduced monthly fee.

*Fusion MiniBonder* Bond two or three lines with the option of a 4G USB failover.

**Please note:** All prices quoted in this document are inclusive of GST

### Contact

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