

Rural Broadband Solutions
by
Richard Dix
of
RuralBroadband.co.uk



RuralBroadband.co.uk, 2011 (Images from Deltenna, Avanti and Tooway)

Non Fixed Line Solutions



RuralBroadband.co.uk, 2011 (Images from Deltenna, Avanti and Tooway)

The WiBE 3G Solution

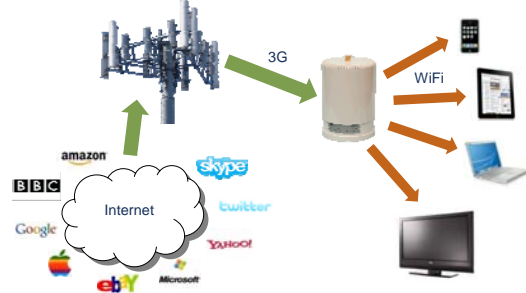
No broadband?
Slow broadband?



RuralBroadband.co.uk, 2011 (Images from Deltenna, Avanti and Tooway)

The WiBE connects users to the Internet ...

... using the 3G network



RuralBroadband.co.uk, 2011 (Images from Deltenna, Avanti and Tooway)

The WiBE - designed for fixed broadband



- All these devices are designed for mobile use
- Low performance antennas
 - Small
 - Omni-directional
 - Low gain
- Leads to
 - Limited range from 3G base station
 - Limited data throughput

- For fixed broadband this is not necessary
 - Because mobility is not required
- The WiBE is optimized for performance



RuralBroadband.co.uk, 2011 (Images from Deltenna, Avanti and Tooway)

The WiBE - Optimized for performance

Wireless Broadband Extender – WiBE®

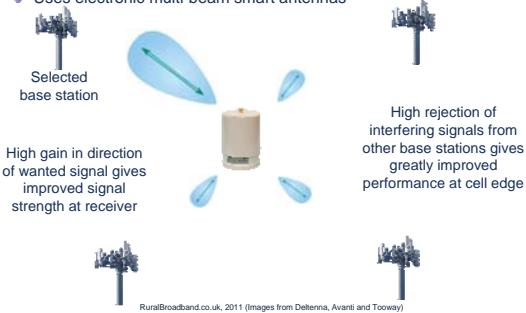
- 3G-WiFi router with optimized 3G antennas
 - High gain
 - Directional
- Small form-factor
 - Place near a window
 - Plug in
 - Start using



RuralBroadband.co.uk, 2011 (Images from Deltenna, Avanti and Tooway)

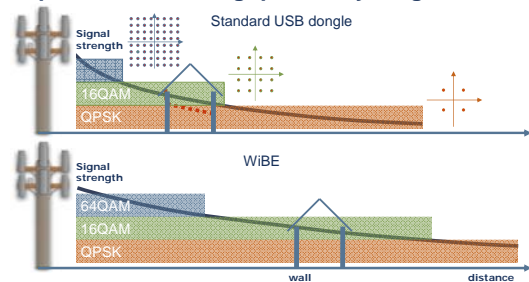
How does the WiBE work?

- The same principle as pointing a TV aerial
- Uses electronic multi-beam smart antennas



RuralBroadband.co.uk, 2011 (Images from Deltenna, Avanti and Tooway)

Improved data throughput at any range



The signal strength at the WiBE receiver is over 20 dB better than in a typical dongle allowing the base station to use higher order modulations and less channel coding bits

RuralBroadband.co.uk, 2011 (Images from Deltenna, Avanti and Tooway)

What's inside a WiBE?

- A 3G modem
- An IEEE802.11bgn router
- But mainly antennas



RuralBroadband.co.uk, 2011 (Images from Deltenna, Avanti and Tooway)

How much better does the WiBE perform?

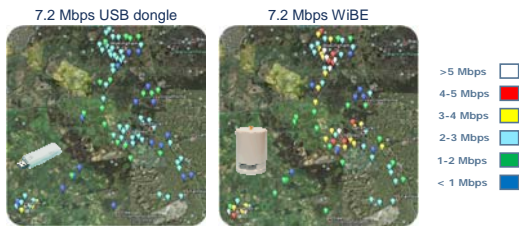


- This means the WiBE has
 - 3x range of best in class 3G router
 - 10x range of dongle

RuralBroadband.co.uk, 2011 (Images from Deltenna, Avanti and Tooway)

WiBE gives better throughput at any distance

- UK field survey results
- 100 locations where both dongle and WiBE can connect



RuralBroadband.co.uk, 2011 (Images from Deltenna, Avanti and Tooway)

WiBE-HS7 router - main features

- Self-configuring
 - SIM detection
 - APN recognition
- Web-based user interface
 - No software to install on PC
- Fully featured for advanced users
- Router
 - DHCP
 - VPN passthrough, Static routing
- WiFi IEEE802.11bgn
 - Extended range
 - Security: WEP, WPA, WPA2 options
- Firewall
 - MAC/IP port filtering
 - Port forwarding, Virtual Server
 - DMZ
 - Content filtering



RuralBroadband.co.uk, 2011 (Images from Deltenna, Avanti and Tooway)

Who Needs a WiBE®?

RuralBroadband.co.uk, 2011 (Images from Deltenna, Avanti and Tooway)

Geoff Does

- Geoff lives in a remote corner of Wales
 - Clynnog Fawr – 15Km from Caernafon
- Difficult coverage area
 - Mobiles only work hanging out the window
 - Dongle was getting 32Kbps
- WiBE® achieved 792Kbps
- The BBC iPlayer® worked with the WiBE®



RuralBroadband.co.uk, 2011 (Images from Deltenna, Avanti and Tooway)

Broadcasters do

- In Cumbria area ISDN is declining and 3G is patchy at best.
- For Radio the options are then a VSAT van (expensive) or a dongle
- Here in Whinlatter the broadcaster achieved 136Kbps – enough for a broadcast quality live insert
- WiBE® for significant cost savings



RuralBroadband.co.uk, 2011 (Images from Deltenna, Avanti and Tooway)

Construction companies/ Builders

- Building sites don't usually have ADSL
- It is something BT will fit when there are customers there
- So to get started a WiBE® offers instant internet at most locations



RuralBroadband.co.uk, 2011 (Images from Deltenna, Avanti and Tooway)

Surveyors

- Working at various locations
- Can't always guarantee an ADSL connection
- Can't guarantee a WiFi hotspot
- Can't always get a dongle to connect
- Much higher probability a WiBE® will connect as it has 10 times the range of a Dongle



RuralBroadband.co.uk, 2011 (Images from Deltenna, Avani6 and Tooway)

New Office/ Temporary office

- New Office – you need to contact BT and order ADSL – can take a while and can be expensive
- WiBE® is an instant start up, plug and play



RuralBroadband.co.uk, 2011 (Images from Deltenna, Avani6 and Tooway)

What about Voice?

- Skype works well
 - (Other Sip clients are available)
- WiBE® is an instant start up, plug and play
- Can have fixed IP SIMS and Specific QoS for VoIP.



RuralBroadband.co.uk, 2011 (Images from Deltenna, Avani6 and Tooway)

Apartment/ New House

- New House – you need to contact BT and order ADSL – can take a while and can be expensive
- WiBE® is an instant start up, plug and play



RuralBroadband.co.uk, 2011 (Images from Deltenna, Avani6 and Tooway)

Remote Monitoring

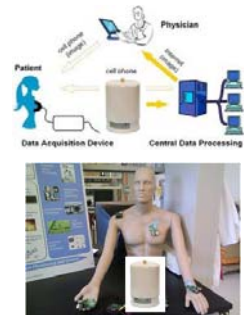
- Locate IP WiFi web cam at surveillance point
- WiBE® is an instant start up, plug and play
- Web Cam sends via the WiBE
- Just add Power



RuralBroadband.co.uk, 2011 (Images from Delterra, Avanti and Tooway)

Remote Patient Monitoring

- WiBE® can be used for back hauling the data if patient does not already have ADSL



RuralBroadband.co.uk, 2011 (Images from Delterra, Avanti and Tooway)

Business Continuity

- What do you do if the ADSL goes down?
- Its rare, but not unusual,
- BT went down across the whole of the North of England in 2010 one Friday evening
- WiBE® is an instant start up, plug and play



RuralBroadband.co.uk, 2011 (Images from Delterra, Avanti and Tooway)

Business To Business

- Business Continuity – Emergency back up connection.
 - Saves you when the Internet fails
- Initial connection in New Offices
 - Temporary set up to get going when moving, can be used to guarantee service on day 1, Hour 1 of an office move, then becomes the Emergency backup connection when BT finally install the main line.
- Remote Workers
 - All those employees stuck at home in the snow
- Poor to no connections with a Dongle
 - Full service with a WiBE®



RuralBroadband.co.uk, 2011 (Images from Delterra, Avanti and Tooway)

Business To Retailers

- Business Continuity – Emergency back up connection.
 - Saves you when the Internet fails
 - Keeps your credit card machine working
- Poor to no connections with a Dongle
 - Full service with a WiBE®



RuralBroadband.co.uk, 2011 (Images from Deltenna, Avanti and Tooway)

Retailer to Consumer

- Poor to no connections with a Dongle
 - Full service with a WiBE®
- Longer range than a Dongle or MiFi
- Ideal for Rented accommodation
 - No wires, no cables, easy set up
 - Plug and Play
- Ideal for remote locations



RuralBroadband.co.uk, 2011 (Images from Deltenna, Avanti and Tooway)

WiBE® benefits summary

For the user

- Internet connection
 - Where there is no DSL
 - Out of range of other cellular devices
 - Temporary locations
 - Mobile users
- Improved data throughput
 - Offers higher throughput than a dongle
 - Finds an uncongested cell for better throughput,



RuralBroadband.co.uk, 2011 (Images from Deltenna, Avanti and Tooway)


WiBE® benefits summary

For the business

- Internet connection
 - When the ADSL dies.
 - Emergency backup
- Temporary locations
- Mobile employees
- Employees stuck at home in the snow
- Improved data throughput
 - Offers higher throughput than a dongle
 - Finds an uncongested cell for better throughput,





RuralBroadband.co.uk, 2011 (Images from Deltenna, Avanti and Tooway)



Satellite Broadband

- Satellite broadband is a proven technology, delivering high-speed services to customers beyond the reach of terrestrial networks
- Over 1 million premises are equipped with satellite broadband in the USA
- Ka-band provides higher power, therefore higher speeds, lower costs
- End-users are typically equipped with a 74cm antenna, with customer connection from a standard ethernet cable

RuralBroadband.co.uk, 2011 (Images from Deltenna, Avanti and Tooway)

- A range of service speeds now available up to 8Mbps download and 2.5Mbps upload
- Standard antenna sizes 74cm
- End user prices are :
 - 2Mbps / 512kbps £23 per month
 - 4Mbps / 1Mbps £26 per month
 - 8Mbps / 2Mbps £49.50 per month
- Equipment and installation available for under £500

RuralBroadband.co.uk, 2011 (Images from Deltenna, Avanti and Tooway)

Availability

- Services are available to order right now!
- Equipment and installation fee always barrier to take up for alternate technologies
- However, equipment costs are falling – equipment in 2007 was over £1300 per unit, in 2011 its less than £500

Choice of providers including Avanti and Tooway now using Ka-band


RuralBroadband.co.uk, 2011 (Images from Deltenna, Avanti and Tooway)

Options

Satellite can provide Triple Play

Broadband
TV
Telephone

VOIP with local code
Freesat or Sky using a side arm
Broadband up to 10 Meg



RuralBroadband.co.uk, 2011 (Images from Deltenna, Avanti and Tooway)

The biggest benefit ...

- Satellite and 3G services are available now.
- High speed with faster coming

- No cables
- No digging
- No waiting

**Thank you for
your time**



**ADSL • SATELLITE • WIRELESS
FIBRE • ANYWHERE**

Kurabroadband.com.au, 2011 (images from DSLForum, Avnet and FCC.gov)