

DrayTek

Wireless LAN Aerials

For 802.11b/g/n

Vigor routers equipped with Wireless LAN facilities are supplied with the standard 2 or 3dB gain aerials. A higher gain aerial provides a signal gain which can in many circumstances improve your wireless coverage/range as well as your connection speed at longer ranges, particularly where your required coverage area is currently borderline and needs a 'little extra help'.




Uni(single)directional aerials are intended for application where you want the signal in one direction only, either for increased range or for security reasons. By concentrating an aerial in one direction, both transmission strength and receive sensitivity are improved as well as benefits in avoiding interference or traffic from adjacent networks in other directions.

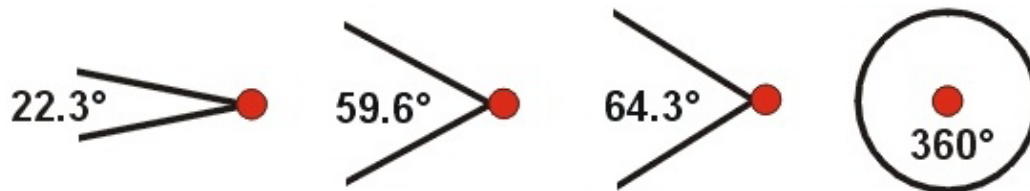
Wireless antenna gain is a complex area and we'd recommend seeking out a specialist site for further details but put simply, aerials are designed in such a way that they can increase the signal output from the transmitter's original output. The output of the Vigor routers wireless module is approximately 17dB (or dBmW), after allowing for any loss from cables and before antennae gain. The standard aerial supplied with the router is 3dB gain.

The ANT-2510 model is rated for outdoor use and can be used for WDS links between buildings. When used outside, the antennae connection must be wrapped in self-amalgamating tape in order to waterproof it. That tape is widely available, as used for satellite dish connections.

One, Two or Three ?

Vigor routers have one, two or three aerial connectors. Having more than one gives the advantage of 'diversity' which means (put simply) that a signal subject to some local interference in one particular plane, may be better on the other aerial. On a Vigor router with two aerials, the second aerial is for receive only. The main aerial both receives and transmits. Therefore, if you are fitting a replacement aerial, it is not necessary to replace both or have two fitted. If you do have two fitted, however, they should be the same. On 802.11n 'MIMO' Vigor routers, there are three aerials. The outer two are Transmit/Receive and the centre one is Receive only. You can experiment for best performance, particularly with regard to aerial position and angle.

Model Name	ANT-1107	ANT-2309	ANT-2510
			
Gain	7dB	9dB	10dB
Beam	Omni-Directional	Unidirectional	Unidirectional
HPBW	360° Horizontal 22.3° Vertical	64.3° Horizontal 64.3° Vertical	56.9° Horizontal 56.9° Vertical
Dimensions	265mm High	125mm High 101mm Wide 51mm Deep	212mm High 212mm Wide 27mm Deep
Cable	1M Fixed	1M Removable	1M Removable
Optional 3M Cable	N/A	ANT-CAB3	ANT-CAB3
Mount	Mag/Desk	Wall	Wall
Supplied As	Singly	Singly	Singly
Location	Indoor	Indoor	In/Outdoor (IP65 Rated)



An Omnidirectional angle transmits its beam in all horizontal or vertical directions equally (360°). A directional (or 'unidirectional') aerial concentrates its beam in one direction, with a specific beam angle. By concentrating all of the signal in one direction, the signal and receive sensitivity is stronger. This is also ideal for short-range intra-building links using WDS. Note that the unidirectional aerials actually have a considerably narrower vertical beam, hence you actually don't want your PC/client to be too close and high or low to the aerial as otherwise you can actually 'miss' the signal area.

Important Note : Wireless performance always depends on your specific environment. Although the aerials provide higher gain, no guarantee can be made that in any specific circumstances they will improve your wireless performance. There are maximum permitted signal levels permitted in most countries, so you should also check any local legislation. In all cases, you should use identical aerials on your router (e.g. if it has two, they should both be the same type), and if three aerials, they should also all be the same. DrayTek do not recommended or support the use of 3rd party aerials/ boosters. IP65 Outdoor Usage : The ANT-2510 model is IP65 rated (against showers and indirect jets). In order to meet this rating, when sited outdoor the SMA connector and plug must be adequately sealed with self-amalgamating tape, available in most DIY stores. Site the aerial under cover where possible. A lightning strike can cause irreparable damage to your aerials, router and any other connected equipment.