

The Comet CHA-250BX Broadband GP Antenna

The Comet CHA-250BX antenna (foreground) mounted high on one of G3LDI's masts.



enormous with their accompanying radials and loading coils but the vertical I've been testing has only one matching section at the bottom and no radials at all and would be fairly inconspicuous. The only disadvantage of this particular vertical is that it must be mounted about 10m (35ft)* in the air. The antenna is 7.3m (24ft) long, so again it might be difficult to achieve this height. The frequency range is from 3.5 to 50MHz, however, so it's a genuine multi-band antenna. The vertical arrived in a small cardboard box and the complete contents can be seen in Fig. 1, as I laid them out on my lawn.

*See reply panel from Nevada.

No Gaps In Coverage!

The Comet CHA-250X broadband vertical antenna will (amazingly) cover 3.5MHz (80m) through to 50MHz (6m) with no gaps! Transmit range is 3.5-57MHz and receive range is 2-90MHz, with an s.w.r. <1.5:1. This 7.3m long vertical requires no radials and weighs only 3kg (7.1lb).

The antenna consists of five sections of aluminium tubing

| BAND | CHA | EVX |
|--------|------------|------------|
| 28MHz | 5-8 | 5-8 |
| 21MHz | 5-4 | 5-4/5 |
| 24MHz | 5-7 | 5-8 |
| 18MHz | 5-6 | 5-5 |
| 14MHz | 5-4 | 5-3 |
| 10MHz | 5-8 | 5-9 + 10db |
| 7MHz | 5-3/5 | 5-9 |
| 3.5MHz | 5-9 + 10db | 5-9 |

that slide into each other. The sections are reinforced so that the tubing does not distort when tightening the bolts that hold them together. The bottom

Fig. 2: Table showing performance tests of the review antenna and a comparative system.

Our local club – the Norfolk Amateur Radio Club - has had an influx of new members over the last couple of years. They've been recruited mostly from local events, shows, science festivals and the like. The age ranges are varied, from as young as 13 to mature adults. However, nearly all have a common denominator and that's a small garden!

To talk about the installation of towers, multi-element beams or even long wires to the small garden owners is a waste of time and they probably regard such luxuries as impossibilities. However, there's a choice of multi-band verticals that can be used in the small garden.

Even so, some multi-band verticals can look

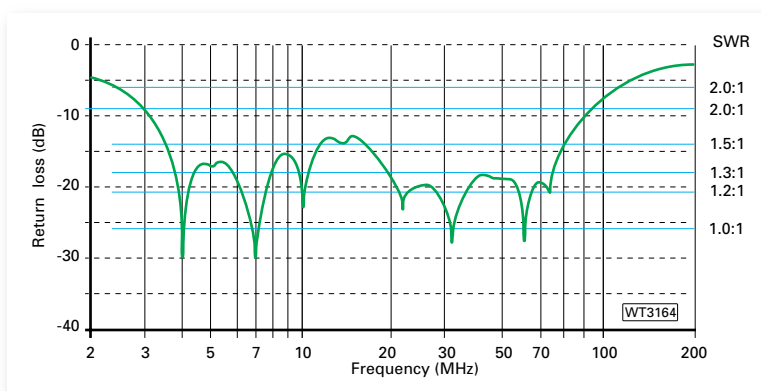


Fig. 3: Graph indicating v.s.w.r. measurements obtained by G3LDI.

Roger Cooke G3LDI has a truly superb antenna 'farm' at his Norfolk QTH and often reviews antennas on the air for PW. This time, Roger reports on a broadband antenna he's had for some months - enough time to give the CHA-250BX Broadband GP Antenna a good 'soak test'.



Fig. 1: The antenna before assembly, posed on a freshly trimmed lawn!

section has the 'magic' matching network built-in.

The topmost section is held in with two Allen screw adjustments. Only two simple measurements are required during the easy assembly. The manufactures claim it can handle 250W p.e.p. of s.s.b. and 125W of f.m.

The antenna has an SO-239 input and mounts on a 25 or 50mm (1 to 2in) mast (not supplied) and is rated for 108km/h (67mph) wind survival.

Limited Garden Space

As I've already mentioned, this type of antenna is best suited to Amateurs who have very limited garden space as it enables them to have all-band ability and I was pleased to accept the review commission to help those with lack of garden space.

Assembling the antenna is easy, just two tools are needed, one of which, the Allen key, is provided. There are no post assembly adjustments to make, so it's ideal for the raw beginner.

When assembling the antenna, I would advise using Penetrox (or other suitable graphite based electrically conductive paste) on each tube overlap. This will ensure good conductivity.

The matching network at the base of the vertical add to the weight and 3kg (7lb) of antenna at the top of a pole will make it vulnerable in high winds. However, it's quite easy to guy something like this and I think for a permanent installation, guy ropes are mandatory.

Performance Tests

I was lucky enough to have a Moonraker EVX8000 h.f. vertical here as well, so I did some comparative tests locally with my friend **Dave Johnson G3MPN**, who lives about 12km (8 miles) away.

The table shows the results of these tests. However, I don't suppose any assumptions can be drawn from these results although it was an interesting exercise! Dave mentioned that there seemed to be more QSB on the 'CHA for some reason. Incidentally, we cannot account for the large difference on 7MHz (See Fig. 2).

On the air results were similar, not much to choose between the two, except that neither antenna produced 'sock-it-to-them' results! But then they are multi-band verticals and both antennas did what it 'said on the tin', so to speak.

I worked quite a few European stations on both antennas and using the Comet I managed to 'crack' the 5A7A (Libya)

Product: Comet CHA-250BX Broadband GP Antenna

Company: Nevada (UK Agents)

Contact

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Pros & Cons

Pros: Genuine wideband antenna, no gaps in coverage, easy to assemble.

Cons: Will require guying if mounted at height.

Price: £299.95 plus £10 P&P

Supplier

Nevada, Unit 1, Fitzherbert Spur, Farlington, Portsmouth, Hampshire PO6 1TT

Tel: 023-9231 3090

FAX: 023-9231 3091

E-mail: sales@nevada.co.uk

pile-up on 7MHz. When I say 'cracked' the QSO, I meant that I worked them after a few calls but there was still quite a number calling him. I also worked a W4 in Florida on 7MHz, the 4O60BH special station (the on air 60th birthday party for keen DXer **Martii Lane OH2BH**), a 5Z4 (Kenya) on 21MHz and called into the Ex-G net on s.s.b. (All other contacts were on c.w). The 'CHA was about 12m (40ft) in the air, and the 'EVX was on a 3m (10ft) pole.

Note: I was following the instructions for both antennas literally, to get the best results! The instructions on the Comet suggested around 12m and the Moonraker recommended a height of around 3m.

The v.s.w.r. was reasonable over the bands tested, and the resultant graph can be seen in Fig. 3.

If you are limited for space and need an antenna for multi-band operation, you could consider the Comet CHA - 250BX Broadband GP Antenna as a solution and I thank Nevada for the loan of the review antenna.

Mike Devereux G3SED, Managing Director of Nevada, comments: Hi Rob,

Thank you for providing a pre-publication copy of Roger G3LDI's review of the Comet antenna. Following our chat today I would like to add the following comments. Despite the manufacturer's recommendation that this antenna be mounted at 9m (30ft) or more, many customers tell us it actually performs very well even when mounted at 12 to 24ft (3.6 to 7.3m). My thanks for the review go to PW and Roger G3LDI.