

It's portable and practical!

# The I-Pro Traveller Antenna

Review

I was invited by the Editor to check out another antenna product from **Carl Kidd G4GTW** and was delighted when the details arrived describing the I-Pro Traveller antenna as a vertical dipole for home and portable use. The word 'Portable' always stimulates my interest as I'm a keen motor-caravanner and I eagerly awaited the product's arrival.

The well packaged item was delivered in good order and unpacked with care, noting just how it had been placed in its one metre long holdall. You'll all be aware of how many portable products don't seem to fit in their original cases once unpacked. No problem here, detailed instructions are included to ensure that everything fits in and, once properly packed, will suffer no damage in transit – a top priority for us Amateurs!

## In The bag

In the bag I found that the system comprises an adjustable quad-legged base, a spirit level for setting up this base, lower adjustable capacity hat arms, the standard central matching section for 14MHz (20m), 18MHz (17m), 21MHz (15m), 24MHz (12m) and 28MHz (10m), the coaxial feeder link and jumper leads and the top capacity hat arms. (A small bag of essential spares is also included).



**Fig. 1: The contents of the custom-made holdall for transporting the IPro Traveller antenna.**



**All ready for a day operating portable with the IPro Traveller Antenna.**

Each item comes in its own strong plastic bag with an arrowed end marked to show the direction of stowage in the holdall. (It fits if you take heed of this).

A separate central matching unit is available for 7MHz (40m) if required. This was included for the this review but is an optional extra at additional charge.

The photograph, **Fig. 1**, shows the I-Pro Holdall and, left to right, heavy duty plastic bags, four foam protective packing pieces for the quad base, two end caps for the central matching unit, its red container and a pack of spares. Next, is a capacity arm, the support base together with its spirit level, the matching unit, another capacity arm, feeder support arm, jumper leads, instructions and laminated connections card.

## System Description

The system's description is as follows: A multi-band vertical dipole with adjustable capacity hat arms: Power handling capacity at resonance, 14MHz through to 28MHz : 1200W p.e.p.

- Power handling capacity at resonance with the 7MHz section : 1000W p.e.p.
- User manual selection with jumper leads on the multi band central matching unit.
- Dimension across capacity hat arms: 1700mm
- Erected height using either of the central matching units: 3m
- Total weight with standard matching unit only (excludes the 40m unit): 6.6kg

An assembly and maintenance document and a

Dave Mason G3ZPR tries out another antenna designed by Carl Kidd G4GTW and has a great time – working much DX!

laminated card illustrating band changing connections is also provided.

### Construction & Design Features

The antenna is constructed in thick walled aluminium tubing, grade 6082T6; this grade has good mechanical strength and high corrosion resistance. Spring catches are fitted inside the upper and lower ends of the matching section to enable it to be secured to the upper and lower capacity arm sections.

Brackets are zinc plated and all fixings (nuts, bolts, washers and self tapping screws) are of stainless steel. The self tapping screws are only used when the antenna is to remain erected for long periods to ensure that good electrical conductivity is maintained.

**Support base tube:** This section of insulating material at the centre of the quad base is made of glass fibre tubing and is the same as the inductor former of the centre matching section. The material has excellent dielectric properties together with good structural strength and very low moisture absorption characteristics. So, whatever the weather, all year round use is possible.

**Coaxial feeder 8 mm fibre glass support rod/arm:** This cunning feature is simple in concept but is absolutely essential for supporting the feeder connection with its patch lead facility. RG58/CU (military specification) coaxial cable is used. Two jumper leads form part of this assembly to enable different tapping combinations for selected bands.

**Matching section/inductor former:** The windings are set on thick walled glass fibre tubing (as used in the support base) and by using eight bonding points, four on the top, four on the bottom, very low circulating current resistance is assured. The jumper sockets are gold plated and rated at 10A.

### The Assembly

When it comes to assembling the system – clear instructions are provided by the designer and are easy to follow, in practice I found the following routine suited me.

The routine: Set the quad base on the ground, the legs are adjustable so uneven ground poses no problem. Place the spirit level on the support base tube and adjust for level, lock the legs and remove the level. This is then stowed in one of the leg brackets to prevent loss.

The lower capacity arms are opened and located into the support base tube. (Leave unlocked, they will need to be adjusted later).

Select the desired central matching unit (14MHz through to 28MHz or optional 7MHz unit) and fit it into the upper capacity arm section, open and lock the upper arms.

Lift this complete assembly and lock into the lower arm

section already mounted, make sure the spring locks are correctly located in the upper and lower tubes.

Place the feeder support rod/arm into the opening at the top of the central matching unit and fit its flexible ring at the back. Connect a coaxial feeder, minimum length 8m, to the SO239 socket and slide the weatherproof boot down over the joint.

Plug the jumper leads into the appropriate sockets, (referring to the laminated band changing card supplied), trail the feeder away from the antenna at 40-45° (not critical), connect to your transceiver and you are almost ready for 'the off'!

No antenna tuning unit (a.t.u.) or earth connections are needed with this antenna, direct connection to the transceiver reduces any losses. However, it is necessary to include an standing wave ratio (s.w.r.)/power meter to enable the correct adjustment of the lower capacity arms, although once set, it can be removed. In practice I found no detriment to performance by leaving it in circuit as it enabled quick band changes and adjustments.

Adjustments to the lower arms are arrived at empirically, key the transmitter and note the s.w.r. readings, using a measuring tape adjust the arms equally from the centre pole. Next, key the transmitter again to note the effect. You will soon find a dimension that gives you a 1.5 : 1 (or close) result. Carry out this routine for each band, noting your results, and you will be ready for operating with quick band changes when required.

**Note:** Your results will only apply to the type of location where

they are made, with portable operation you will need to make minor adjustments to suit the terrain. (More on this later). And don't forget to lock the lower capacity arms.

### Central Matching Unit

Connection of the feeder cable to the central matching unit is made by two jumper leads fitted with banana plugs and reference to the laminated card supplied. By the time I had completed this review I was familiar with the connections – but an advantage to having the s.w.r./Power meter in circuit is that you soon know if you've got it wrong ! Best stick to the card!

### On The Air

Now for the crunch, does the I-Pro Vertical Dipole do what it is supposed to? I undertook a series of tests – carried out over an extended period – to check its performance, this was to include operation under different geographic and topographic conditions using propagation predictions and to give the maximum opportunity to stretch its ability. In other words – a thorough test!



Fig. 2: Operating on a spit of land jutting out into Poole Harbour, gives 270° views over sea water.

As the antenna uses no earth I considered it was important to test within urban surroundings, countryside, hilly, rocky and sea front conditions. As all of these conditions effect the performance of antennas.

After considering my own local geography, I decided to locate the station on the shore of Poole Harbour near Sandbanks. At this location there's a small sand spit jutting into the harbour, which gives a good 'take off' over the harbour and low lying Purbeck Hill areas to the open sea to the west and south west and over the harbour entrance and Sandbanks peninsula (a favourite place for Lottery millionaires to live!) to the south, south east and east. I thought this should give coverage for a good 270°. The photograph, **Fig. 2**, shows the antenna with its close proximity to the shore line.

The location proved to be a fantastic location for working /P and brought home the meaning of a good ground and a close sea take off! I was rewarded with a good range of countries from Norway, Sweden, Finland, Russia (Archangel down to the Ukraine), Romania and Turkey.

My second visit to this location continued with contacts to most of the Balkans, Italy Austria and Australia (Perth 599 both ways on c.w.).

On the third visit I reluctantly picked up the microphone (out of character for me) and proceeded to make effective contacts with stations from Kazakhstan, Australia (Tasmania 59 both ways), Nigeria, Morocco and Senegal, Madeira and Canary Islands and most of the eastern European countries.

While journeying from home (Poole) to Weymouth on a family visit I just happened to have the portable kit in the car so stopped briefly at Ringstead Bay, no sand here, just pebbles and rocks which made a good seat and operating desk. I responded to a "CQ" and had a super chat (fone) with Charlie in Victoria, the capital of Gozo Island, part of the Maltese group of Islands. Time, however, was not on my side so no further contacts were made.

### High Places

Two visits were then made to Steeple Hill near Creech in the

**Product:** IPro Traveller antenna

**Company:** Pro Antennas

**Contact:** Tel: (01489) 789960

**Pros:** Very convenient contest system due to its ease of transport, assembly and adjustment....it's ideal for portable work!

**Cons:** Small problem with connections (problem now overcome by designer).

**Price:** £279.95 with quad-leg base. Optional 7MHz centre matching section £119.95. Optional custom-made holdall £19.95. The UK p&p cost £9.95. Buyers are asked to make contact prior to making payment to receive an accurate delivery date. (Please see website for further details).

**Supplier:** My thanks go to Carl Kidd G4GTW for the loan of the review antenna. He can be contacted at **Pro Antennas, 3 Forsythia Close, Hedge End, Southampton, Hampshire SO30 4TP.** Tel: **(01489) 789960** [www.proantennas.co.uk](http://www.proantennas.co.uk)

Purbeck Hills, **Fig. 3**, this, with the adjacent Whiteways Hill is a favourite for Radio Amateurs (particularly the **Poole Radio Society!**) and model aircraft enthusiasts. The chalk heights slope away towards Poole, Swanage, Kimmeridge and the Island of Portland (still referred to as an Island although you can drive there!) and provide a good take off for h.f. and v.h.f. alike.

On the first visit the good breeze blowing when I left home, turned out to be a Force 8 gale on the hill, so there was no way the antenna was going to stay upright in those conditions! Indeed, the designer recommended some form of guying in rough weather – but I don't think anything would have kept it standing on this day. The test was abandoned .

On the second visit to this location a more clement weather condition prevailed and we were off again. Contacts were made across the United States and Canada in abundance with Africa, Turkey, Israel, Greece, Russia and the Balkans providing a wide geographical span.



**Fig. 3:** Operating 'up in the hills' above Creech in the Purbeck Hills.

### The Urban scene

The City of Bristol in the English West Country served as my urban location where I located the station at night time in the grounds of a block of flats on the northern edge of the City. While this location lacked the space afforded by 'The Downs' (gentle rolling grassed hills) it's part way down a northern facing slope towards Stoke Bishop.

The location was quite the opposite aspect to one I would normally select – but the results came in during the brief period of operation. The path was open from Lithuania on the Baltic Sea coast, The Netherlands, Bulgaria, Italy and the United States. Operation was only for a brief period and so the results weren't conclusive but, as my wife **Viv** and I were only there to babysit the grandchildren, extended operation was not an option. Once again **I just happened** to have the kit in the boot of the car!

The urban environment can also be accommodated provided there is minimal obstruction to the low angle of radiation at close quarters. This applies to both matching units.

With our fickle and inclement weather I feel the designers recommendation to guy the antenna is a wise comment and the suggested point of guying is 10mm above the feeder support rod. Attachment at any other point is discouraged. I also found it beneficial to keep the matching units ends clean by spraying with a WD40 type of easing oil and wiping off to remove surface film to ensure continued ease of fitting together in its respective tubes.

### The G3ZPR Home QTH

My new shack at my home QTH is well placed for radio work involving portable antenna testing, as I can set them up just outside with easy access for band changing and adjustments. The garden faces north unfortunately and the houses are on the south which make for a fairly good block to low angles of r.f. radiation.

My main station antenna is a Comet CHA 250 BX, properly mounted at 35 ft above ground (and not far short of sea) level. Although this antenna has also low radiation characteristics, it is high enough to clear the house and be a very effective system.

The I-Pro must, however, be at ground level so I wasn't expecting too good results. Despite this, experimenting with moving the antenna across the garden while checking signal strengths from incoming stations resulted in a clear improvement, **Fig. 4**. This process was something akin to setting up a satellite dish through a gap in the adjacent buildings but, it worked!

I'll resist boring readers with a list of countries, be it sufficient to say that, over an extended period, I worked, Europe, Asia, Middle East, Africa, South Africa, Caribbean Islands (Turk and Caicos Islands), Australia (Geelong RST559 on c.w.), much of Europe, the USA, Canary Islands and Canada. But I won't go on!

### Avoiding Comparisons

I don't like comparing specialist antennas with other market contenders when I don't have access to the other antennas. Neither do I have a dipole, which might be considered an acceptable standard.

So, under the circumstances I can only compare the I-Pro with my Comet CHA 250 BX vertical antenna at my main station. Both have low angle radiation properties but there the similarities end – bearing in mind my earlier comments on height above ground. I decided to do a 'Beacon Hunt' with both systems running simultaneously on receive.

This turned out to be



**Fig. 4:** In the more urban environment of the back garden.

more difficult than I expected, the hunt was more about Noise-to-Signal than Signal-to-Noise Ratios! I've provided **Table 1** to indicate the results of the tests and although signals were scant at the time, there was no clear winner. However, I'm confident that the I-Pro equals the performance of the Comet on all bands tested – despite their difference in elevation above ground.

### The Test Rig

For the tests I used my Alinco DX 70TH portable operating rig on the high power setting at 100W. This is the transceiver I use when I'm touring in Europe and the UK with Viv in our motor-caravan – and it has proved itself as a reliable transceiver for portable use.

For portable work my 24Ah 12V battery can sustain operation for a

two to three hour period depending mainly on transmission periods. Contesting would clearly discharge the battery quicker as transmission-to-receive ratio would be close to 1:1.

My test operation involves a much greater listening period so the ratio would be closer to 1:4. All of the equipment fits on to a small trolley, which can get me to places where the car cannot go. This is real freedom!

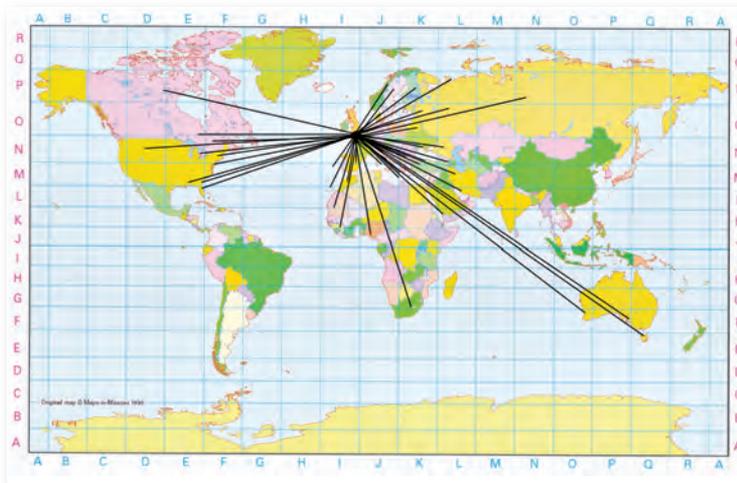
### Overall Result

The I-pro vertical dipole is a pleasure to use and matches its claimed performance. It took me a while to get the hang of setting it up and adjusting for the different bands but I spent time at the home QTH to become familiar with it prior to going portable.

I had watched the online video produced by the antenna designer **Carl Kidd G4GTW**, which gave a good picture of performance at the sea shore and I was determined to put that to the test and to see how performance was affected by other types of location.

The table of results, **Table 2**, shows 93 contacts made to 59 countries(CW+FONE), the sea shore environment although numerically less (time and tide) to the home environment 36/38) was, however, the clear winner in terms of DX countries worked, **Fig. 5**, with 14MHz being the most active band. This also reflects the propagation table prediction.

The 18MHz (17m) proved an interesting band and 21MHz came next. 24 and 28MHz were disappointing – mainly due to propagation conditions as I confirmed



**Fig. 5:** During the review period, David worked stations in many countries.

**Table 1**

LOCATION	CALL	14100	18110	21150	24930	28200
NEW YORK	4U1UN	0000			NIL	NIL
N. CANADA	VE8AT	0010			NIL	NIL
SIBERIA	RR90		0120		NIL	NIL
ISRAEL	4X6TU	0200	0210	0220	NIL	NIL
FINLAND	OH2B	0210			NIL	NIL
MADEIRA	CS3B	0220			NIL	NIL
VENEZUELA	YV5B		0000		NIL	NIL

**Table 2:**

BAND	COUNTRIES	CW	FOXE	SEA	HILL	URBAN	HOME	TOTALS
10 M	0	0	0	0	0	0	0	0
11 M	0	0	0	0	0	0	0	0
12 M	1	0	1	0	0	0	1	1
15 M	8	8	3	1	3	0	7	11
17 M	14	13	6	6	2	0	11	19
20 M	28	23	28	30	3	5	13	51
40 M	8	6	5	0	0	5	6	11
<b>TOTALS</b>	<b>59</b>	<b>50</b>	<b>43</b>	<b>37</b>	<b>8</b>	<b>10</b>	<b>38</b>	<b>93</b>

with my main station, with the Comet antenna being used for comparison. Constant checking of Propagation Predictions and Real Time tables nothing was heard and no responses made. Discussion with fellow Amateurs revealed that only two local Amateurs had heard any activity at all.

Throughout the test period I found only one item relating to it's design which I would like to see improved. The photograph, **Fig. 6**, shows the banana plugs on the feeder lead at the angle **they naturally assume**. The vertical line represents the socketed side of the matching unit where the plugs would be plugged in. It can be clearly seen that, with the red upper plug in situ, there is a tendency for the the lower black plug to be pulled out by it's lead. This is simply remedied by making the black lead longer by the distance of the plugs contact point. Whilst this is not a big issue I found it annoying to have to keep checking the lower black plug to make sure it was still making contact even if not fully home.

As a final comment, I would love to have the opportunity to take this antenna on my European tour later in the year for its compact design and overall performance make it a really attractive option.

**Note:** The 7MHz centre unit was only tested in the urban

and home environments and found to exhibit first class performance remedied by making the black lead longer by the distance of the plugs contact point. Whilst this is not a big issue I found it annoying to have to keep checking the lower black plug to make sure it was still making contact even if not fully home.

The system is available online from **Pro Antennas**, [www.proantennas.co.uk](http://www.proantennas.co.uk) note also that the system comes complete with only the 14MHz through to 28MHz central matching unit. The 7MHz unit is an extra. Video

clips demonstrating the antennas capability are well worth viewing.

I can visualise this antenna being used as a very convenient contest system due to its ease of transport, assembly and adjustment. However, for my operations as G3ZPR/P, it's a purely portable antenna that's particularly suited to sea shore locations but performs very well on hillside and open field locations as well.

In other words – it's ideal for portable work!

My thanks for the loan of the review system go to Carl Kidd G4GTW.



**Fig. 6:** A small modification to the leads was needed to reduce the tendency for the 'earthy' side plug to pull out.

### Carl Kidd G4GTW Comments on the G3ZPR Review

I am delighted with this excellent review; it leaves no doubt that the I-Pro Traveller has met the difficult challenges presented by the many and varied portable operational requirements.

The one and only small criticism regarding the connections has since been addressed. A simple adjustment is now explained in the instructions.

I can honestly say, I have never before read an antenna review that has put an aerial system through such a variety of test locations. Ultimately, this gives the reader a real practical feel for the I-Pro Traveller's true capabilities. The review is extremely detailed and doesn't leave any stone unturned, all in all an excellent job!

**Carl Kidd G4GTW, Pro Antennas**