



8el OWL Ultra - 144-145MHz for super low noise Yagi for weak signal operation

## Description

Available through **WiMo Germany** and **DX Engineering in the USA** - for Direct factory supply, Email us for pricing and time lines.

[www.dxengineering.com](http://www.dxengineering.com) - [www.wimo.com](http://www.wimo.com)

An 8 element OWL-Ultra (4.2m long) Super low noise, light weight Yagi 144-145MHz Optimised for weak signal (EME) operation - New 2020 Model!

**X-pol available upon request & full EME system prices available upon request - This email address is being protected from spambots. You need JavaScript enabled to view it.**

**FINALISED USING ANSYS HFSS fully meshed 3D Solver**

Modelled and finalised with Ansys HFSS 2020 R2 fully meshed antenna modelling software. All aspects of the antenna are measured and modelled including boom, insulators and coax cable. This software is extremely accurate and once built, analyser plots match the simulation exactly. However, the investment required runs into £10,000's in annual lease costs and thus, this investment is reflected in the antenna pricing [ANSYS](#).



**A 8el 144MHz OWL Ultra installed and ready for action**

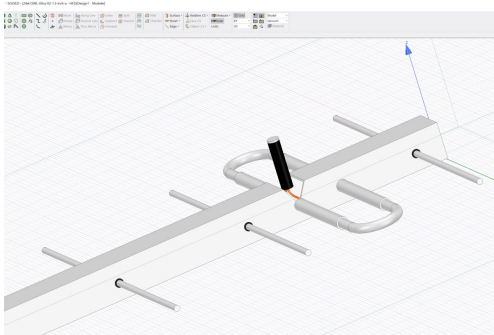
**Fully customisable design - what you want, we will make**

If you require a **larger diameter boom**, rear mount, **X-pol**, a variation in frequency coverage or other variation, contact This email address is being protected from spambots. You need JavaScript enabled to view it. detailing your requirement for a custom quote.

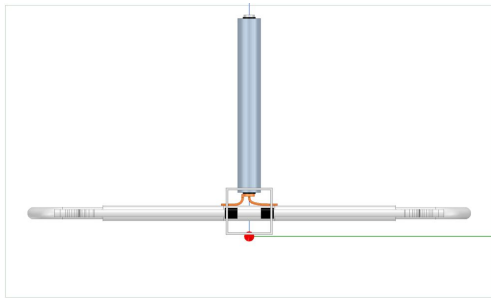
### A note on accuracy

In order for a low noise VHF or UHF Yagi modelled in software to stay low noise when built, the whole antenna needs to be modelled, optimised and finalised as it will be built. Elements, boom, insulators, feedpoint and even coax cable being connected to the model. This way no 'correction' needs to be added, the exact element lengths are given within the software which in our case is the World's leader and most expensive simulation package available today Ansys HFSS.

a 'Fixed' length correction such as formulas given by K1FO and DL6WU, will NOT replicate a wires only model to real world antenna. Any such correction would be percentage based with a lower percentage being needed for first and last elements.



**A 70cms LFA Yagi as presented within Ansys HFSS showing all aspects of the antenna being factored into the model**



**A 70cms Ultra Yagi from the front in Ansys HFSS with ferrite core balun attached. All aspects of the antenna are factored into the design**

## The very latest G0KSC designs

The G0KSC OWL Ultra is another fantastic design by G0KSC. A low impedance Yagi provides excellent performance. However, traditionally, low impedance has meant narrow bandwidth.

G0KSC developed the OWL (Optimised Wideband Low impedance Yagi) with a folded dipole driven element which this has increased the feed point from 12.5 $\Omega$  impedance to 50 $\Omega$ . This along with careful, long duration computer optimisation has resulted in a much wider bandwidth than previously seen in native low impedance Yagis.

## THE Low Noise Yagi dubbed the 'Urban Yagi'

The super low noise characteristics of the OWL Ultra mean you can HEAR as well as be heard in today's modern and very noisy city environments. If you want the very best option for minimal noise pick-up in Urban and city locations, the OWL Ultra is for you.

## Best in Class performance in terms of G/T?

Antennas finalised in fully 3D meshed packages with thru-boom elements are not easily reverse engineered into EZNEC and the VE7BQH table required NEC based models in order to be listed.

## Excellent wet weather performance

The OWL Ultra is usable in all weathers. Unlike some antennas that shift frequency and become unusable when wet, the OWL Ultra remains perfectly usable.

## Latest and best G0KSC designs only available through InnovAntennas

The OWL-Ultra is the latest, 3rd generation OWL and provides G/T performance not seen at this boom length previously (VE7BQH independent comparison list). **The latest G0KSC designs are ONLY available through InnovAntennas.**

## Elevation lobe suppression is key

One of the reasons the OWL Ultra performance is better than other Yagis of the same size is the special attention paid to elevation lobes during the optimisation process. Whether you believe you live in a quiet location or not, elevation lobes will ensure your received noise floor is higher than it would otherwise be if they were greatly suppressed. Even if you have a shack in the middle of open countryside, if your shack is directly below the antenna or in view of the antenna in certain directions, noise from everything in the shack (from computers, modems, LED lamps, alarms WiFi adapters etc.) will increase your noise floor. The highly suppressed elevation lobes of the OWL Ultra will ensure your noise floor is as low as possible.

## Mechanical design

The new OWL Ultra is designed in a light weight and very strong package with this particular model using a **3/4" square boom** with through boom (insulated) **1/4" solid rod elements**. The driven loop is adjustable in order to ensure absolute minimum return loss figures can be seen and is made from **1/2" tube with 3/8" diameter loop ends** which trombone to provide the finalisation tuning ability. The folded dipole is through the boom as are the parasitic elements although the section of loop opposite the feed point is grounded to help reduce noise and to help protect the receiver front-end against static. Grounding the loop in this way also provides a band pass filter characteristic. The feed impedance goes very high quickly once moving away from the 2m ham band and this results in a filter property being added to the antenna for out-of-band signals, received or transmitted.

## G0KSC variable element correction applied

SWR characteristics are unparalleled as a result of the applying of G0KSC variable, percentage based correction to all through boom elements. Fixed length element correction does not match software models precisely. The correct method is to apply a % to the elements which vary greatly between the first (reflector) and last (final director) elements. However, an added complication is that the first and last few elements at either end of the boom, require less correction than those centrally mounted on the boom. Don't worry, all these correction issues are taken care of by G0KSC during the design and testing process.

**Other benefits include:**

- Marine grade stainless steel fittings
- Super-light but rigid construction
- Mill finished boom and elements for highest levels of accuracy
- Unparalleled after-sales support and assistance when needed

For more information [Email Here](#)

**Performance**

**Gain:** 14.01dBi @ 144.3MHz - (Ansys HFSS 2020 R2 verified)

**F/B:** 32.71dB @ 144.3MHz

**Peak Gain:** 14.02dBi

**Gain 10m above ground:** 19.85dBi

**Peak F/B:** 33.31dB

**Power Rating:** 5kw

**SWR:** Below 1.2:1 from 143.8MHz to 145.2MHz

**Boom Length:** 4.2m

**Weight:** 3kg/6.6lbs - 1" square boom

**Safe Wind Speed:** 160Kph/100Mph

**Turning Radius:** 2.334m/7.7ft

**Vertical Stacking:** Between 2.1m and 2.6m for minimum under-lobes

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