

A 17 element super low-noise 432MHz LFA Yagi



## 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)

**A Super Low Noise Yagi for serious DX and EME applications - 2020 LFA- Ultra light weight and strong! Ideal for SSB, CW and Data modes such as FT8, FT4, JT65 and more!**

The G0KSC LFA (Loop Fed Array) Yagi has quickly become 'the one to have' if you are looking for serious weak signal work on VHF and UHF bands. Unlike other companies and designers, G0KSC has dismissed the 'one size fits all' antenna modeling approach and does not model every antenna as if it were for the HF bands. Instead careful consideration is taken to ensure the performance parameters of each antenna fit well with the characteristics of the band in question. Sky and ground noise (temperature) play a role in an antenna's ability to receive signals and the G0KSC LFA-Ultra (Low Noise) Yagi has been modeled for the absolute best noise figures possible, ensuring you can hear anyone that hears you, even if you are QRO and they are not!

### Design Notes:

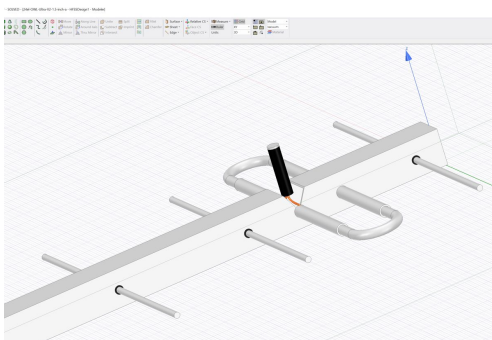
The G0KSC LFA-Ultra series of Yagis introduced in 2020 for 430-435MHz and have been specifically designed for maximum suppression of the rearward 'bubble' when a singular or multi-antenna array are in use. The design allows for forward lobes to appear but keeps them close to the main lobe. This 'outlet' for the frontal lobes helps reduce the rear suppression when stacking and hence the much tighter rear pattern with almost every direction (other than the main lobe) being down 30dB.

The G0KSC LFA-Ultra LFA Yagis for 70cms are streets apart (in terms of performance) from anything else in its class and more and more hams will become accustomed to the stunning performance they deliver, as time goes by.

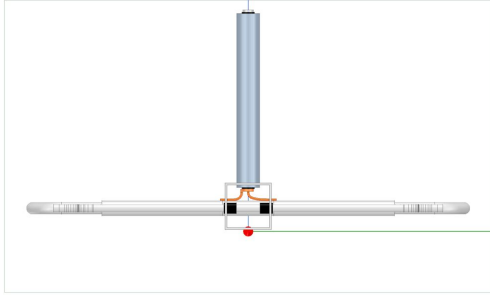
### A note on accuracy

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

### Easy installation

One of the biggest functional benefits of the LFA-Ultra is it's simple construction and minimal use of hardware allowing for super-fast and simple construction and a limitation of spare or replacement parts that might be required in future.

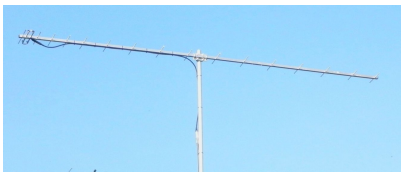
Read more about the LFA Yagi [HERE](#).

The LFA is especially effective for EME where very low noise antennas are required and many hours development have been spent ensuring the highest levels of performance have been achieved in an antenna that is not affected by wet weather conditions. As a single, double and 4 stack (or more) system, the LFA Yagi is the one to have.

Our antennas are constructed with the best quality materials in order the best mechanical construction can be achieved, not the cheapest and most profitable! Even a digital caliper is used (with an accuracy of .01mm) to measure the elements during production to ensure they are within 0.1mm of what they should be, this is extremely important on 432MHz and measurements must be as accurate as possible if performance and temperature are to be maintained.

1. **Marine grade stainless steel fittings\***
2. **Original and best Stauff Insulator clamps**
3. **Mill machined for pin-point accuracy throughout**

If you are looking for the best of the best from both a performance and mechanical construction perspective then look no further, you have come to the right place!



The 17el LFA-Ultra installed at G4JHV



Boom and element arrangement of the 17el LFA-Ultra



The driven element of the LFA-Ultra is held in place with just 2 bolts. All other elements are friction-fit

Element and dipole setup on our booms - Marine grade stainless steel used throughout

#### Performance

Gain: 17.65dBi @ 432.200MHz

F/B: 30.72dB @ 432.200MHz

Peak Gain: 17.7dBi

Gain 10m above Ground: 23.6dBi

Peak F/B: 31.30dB

Power Rating: 3kw

SWR: Better than 1:1.3 from 430MHz to 435MHz

Boom Length: 3.84m

Stacking Distance Vertically: 1.35-1.45m (best trade-off 1.40m)

Stacking Distance Horizontally: 1.365-1.412m (best trade-off 1.432m)

*Following figures calculated at 432.200MHz*

2 Stacked Vertically 10m up @ 1.35m spacing - Gain: 26.32dBi

2 Stacked Vertically 10m up @ 1.35m spacing - F/B: 33.13dBi

DL6WU Spacing (1.554m x 1.486m) Gain: 23.52dBi - 32.11dB F/B

**G/T Figure (corrected):** 5.17dB

#### Specification

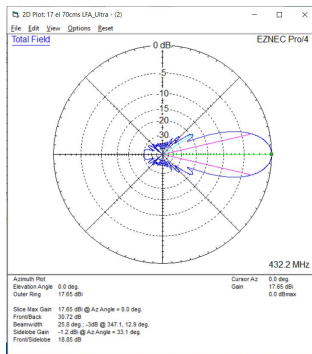
This antenna has all parasitic elements made from 1/4 inch aluminum rod. The LFA loop is constructed from 4 pieces of aluminum tube. The sections in-line with the parasitic elements are 1/2 inch while the end sections of the loop are 3/8 inch allowing the user to adjust the loop for best SWR. All elements are fully insulated from the boom, held in place by high quality UV resistant **RF neutral insulators** which are inserted

into the boom on a friction-fit bases

The boom on this antenna is 1 inch square (25.4mm)

If you want an antenna to last and perform in all weathers without SWR or bandwidth shifting, this is it.

### Pattern of the 17el LFA-Ultra in freespace



For multi-antenna array plots or more information, please contact us at [This email address is being protected from spambots. You need JavaScript enabled to view it.](#)

### Manufactured the right way, not the cheapest way!

\* Where possible marine grade stainless steel components are used.

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