THE

I7SWX

145 MHZ

CIRCULAR

LOOP BEAM

2 ELEMENTS PORTABLE

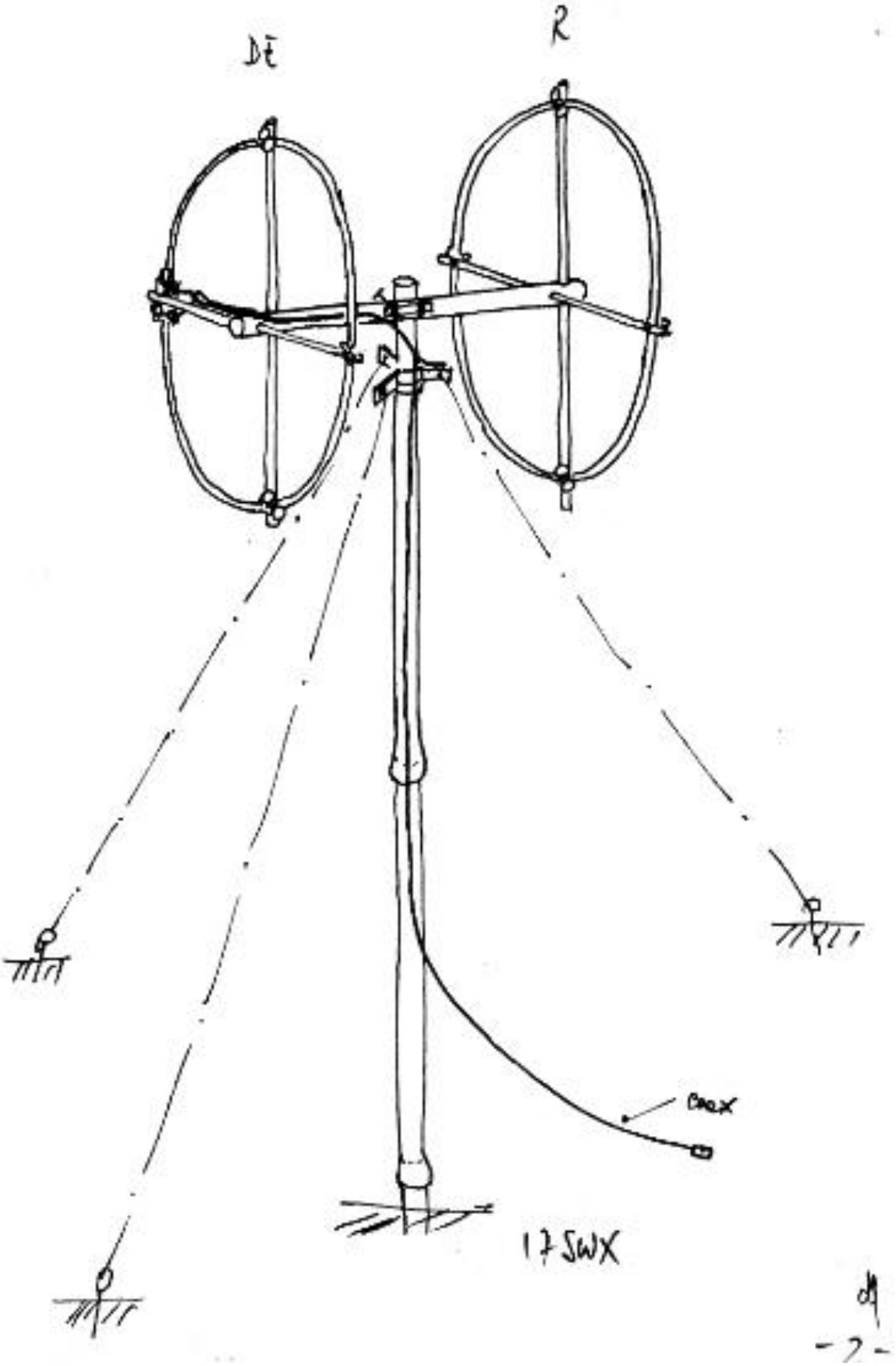
PART 1

FRIENDSHIP THROUGH RADIO

GIANCARLO MODA - I7SWX

1987

I7SWX – VHF CIRCULAR LOOP BEAM ANTENNA



I7SWX – 145MHz CIRCULAR LOOP BEAM

This antenna has been designed to be easily transported and assembled.

Why a beam with circular loops when Quads are easy to build?

A Circular loop beam is a different aerial and more difficult to make. It's construction is due to more to the ham curiosity than specific technical performances.

A circular loop has around 0.5dB higher gain than an equivalent quad element, while has a 2dB higher gain versus a half-wave dipole.

When looking at a beam, a circular loop array has a higher gain than an equivalent yagi array for same boom length. To see it on a different way, a yagi array must have 1.8 longer boom to have the same gain of a circular loop array.

Expected gain for the two elements loop beam is approximately 8-9 dBi. The assembled beam showed a gain of 10dBi, value measure with homebrewed equipment.

L'antennae' costruita in maniera da essere facile da trasportare e da assemblare.

Perche' un'antenna ad elementi circolari quando esistono le quad che sono facili da costruire?

Un'antenna a loop circolari e' una diversa antenna e piu' difficile da costruire. La sua costruzione e' dovuta piu' ad una curiosita' radiantistica che a specifiche funzionalita' tecniche.

Una loop circolare ha un guadagno di circa 0.5dB rispetto ad un elemento quad, mentre presenta un guadagno di 2dB rispetto ad un dipolo a mezz'onda.

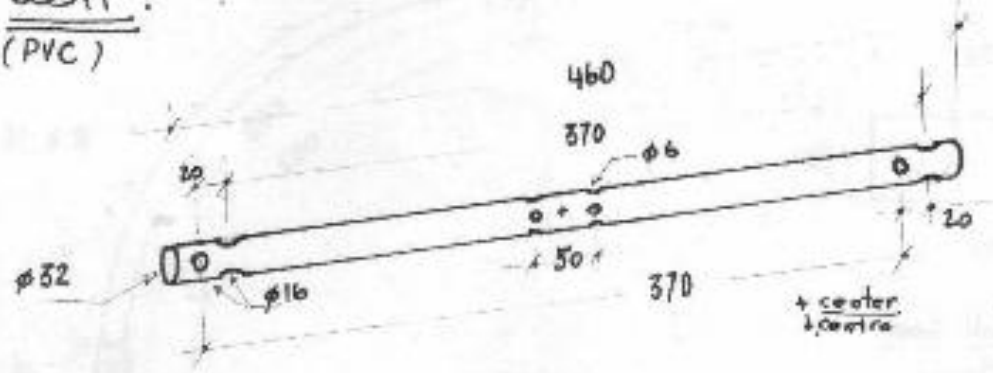
Una direttiva ad elementi circolari ha un guadagno superiore ad una equivalente yagi, per la stessa lunghezza di boom. Guardando da un punto di vista diverso, una yagi per avere lo stesso guadagno ha necessita' di avere un boom 1.8 volte piu' lungo della direttiva a loop.

Il guadagno risultante dovrebbe essere di circa 8-9dBi. L'antenna assemblata ha presentato un guadagno di circa 10dBi, misurati con con apparecchiature auto costruite.

17 SWX - 145 MHz CIRCULAR LOOP BEAM

FRAME ITEMS
MATERIALI

BOOM :
(PVC)



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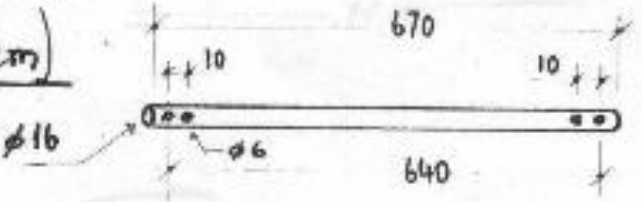
SPIDERS : (PVC)

DE (Emitt. Elem)



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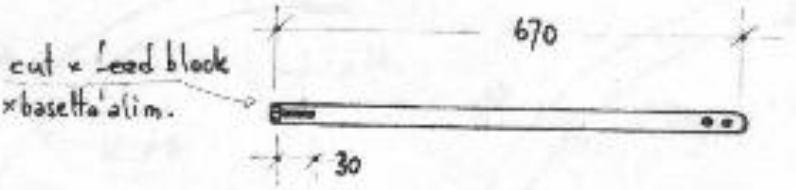

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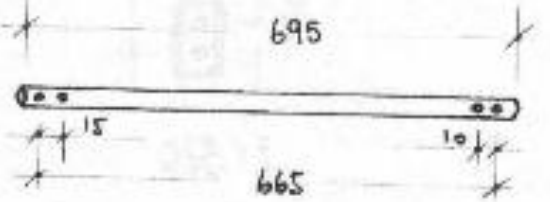
REFLECTOR :



Q.TY TA : 2

* materials see note
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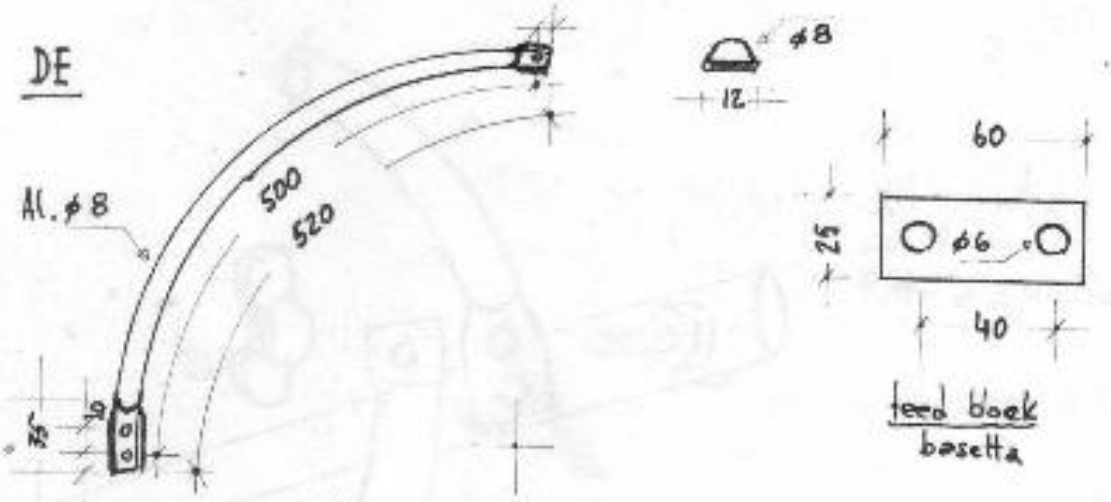
All measures in mm.
Misure in

17SWK- 145 MHz CIRCULAR LOOP BEAM

RADIATING ELEMENTS
ELEMENTI RADIANTI

DE



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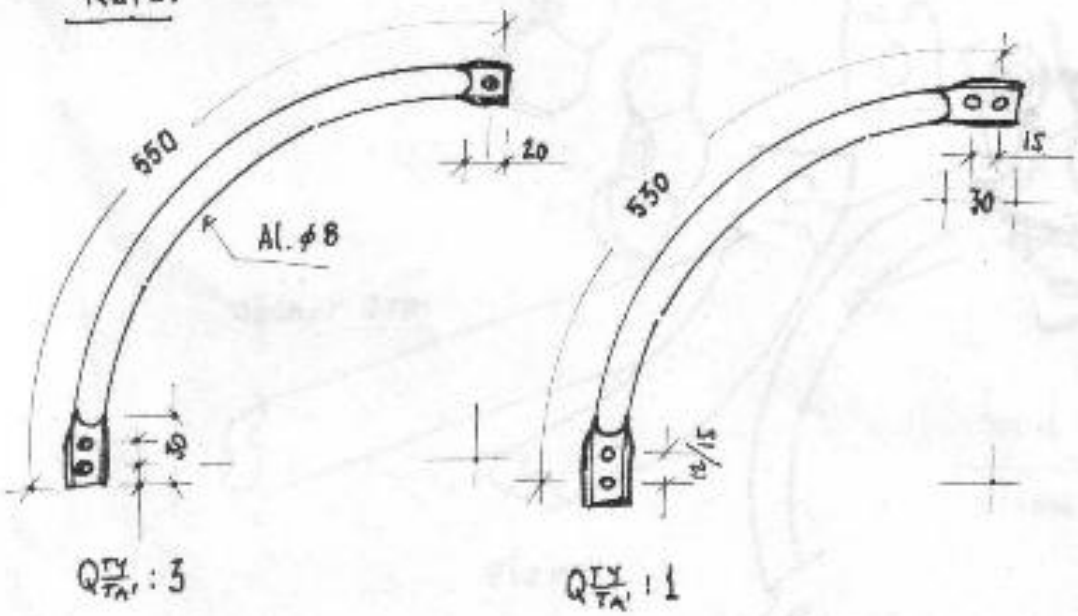

Qty/pz: 3

Qty/pz: 1

I7SWX - 145 MHz CIRCULAR LOOP BEAM

ASSEMBLY NOTES
MONTAGGIO