

# *XRX Fox Forum*

- \* What is Fox Hunting
- \* Types of hunts
- \* Rules
- \* Equipment
- \* Antennas
- \* Attenuation
- \* Advanced hunting equipment
- \* Hunting hints

# What is Fox Hunting?

Dictionary definition:

An ancient form of hunting for fox using a pack of scent hounds often followed by riders on horses



**SAY WHAT?**

# What is Fox Hunting?

Amateur definition:

aka: **R**adio **D**irection **F**inding

The exercise of locating an unknown source or sources of EMF (in the shortest possible time)

# Why Fox Hunt?

- sources of undesirable (EMF)
- stuck transmitters
- lost hikers
- finding malicious radio operators
- animal tracking
- Just plain FUN!

# Types of Fox Hunts

- Local: Intra-building, Campus, Hamfest
- Foot Orienteering with multiple foxes
- Mobile limited distance / VHF
- Monster hunts / HF



# National Foxhunt Weekend

- Sponsored by CQ magazine
- First weekend in May
- Clubs are encouraged to participate and to submit articles
- XARC's Spring Fox hunt

# Big Fox Outside

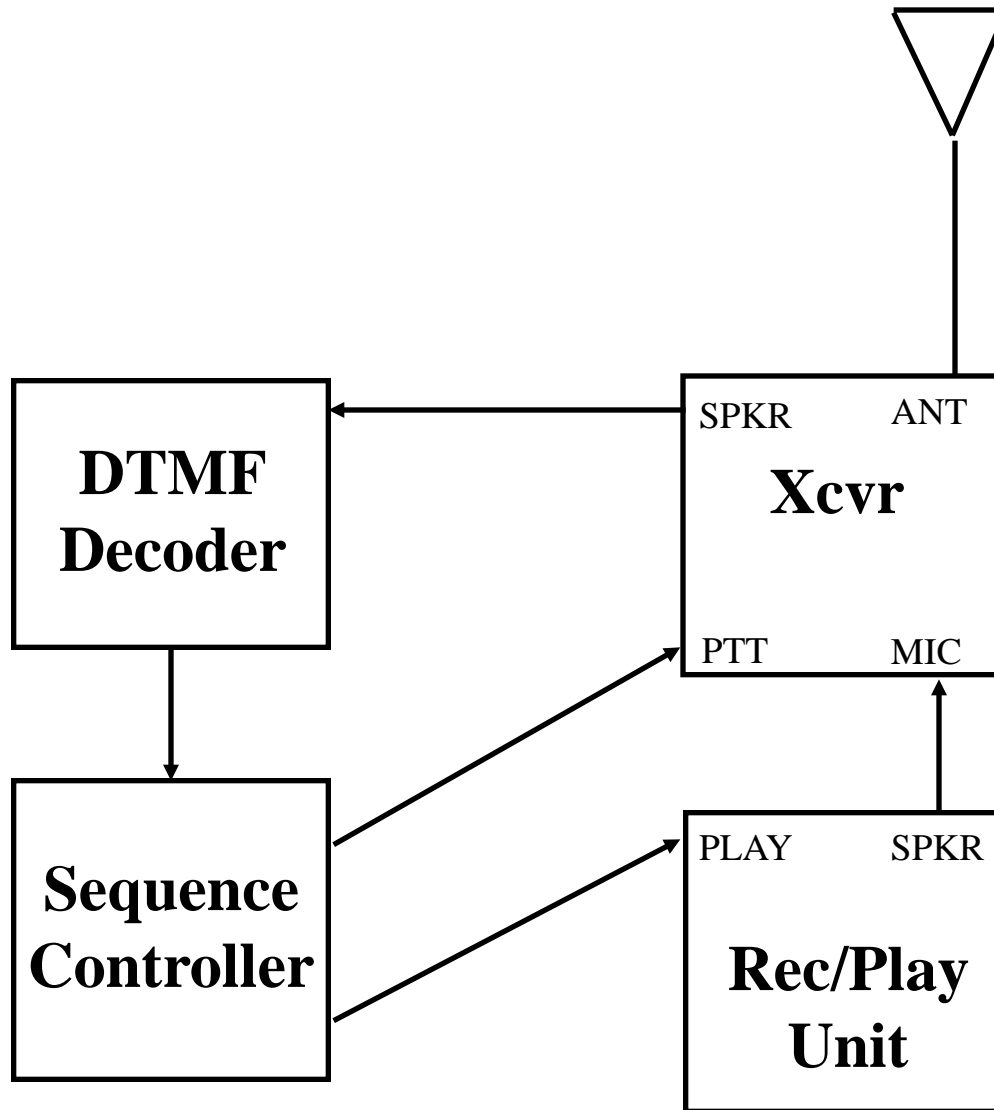




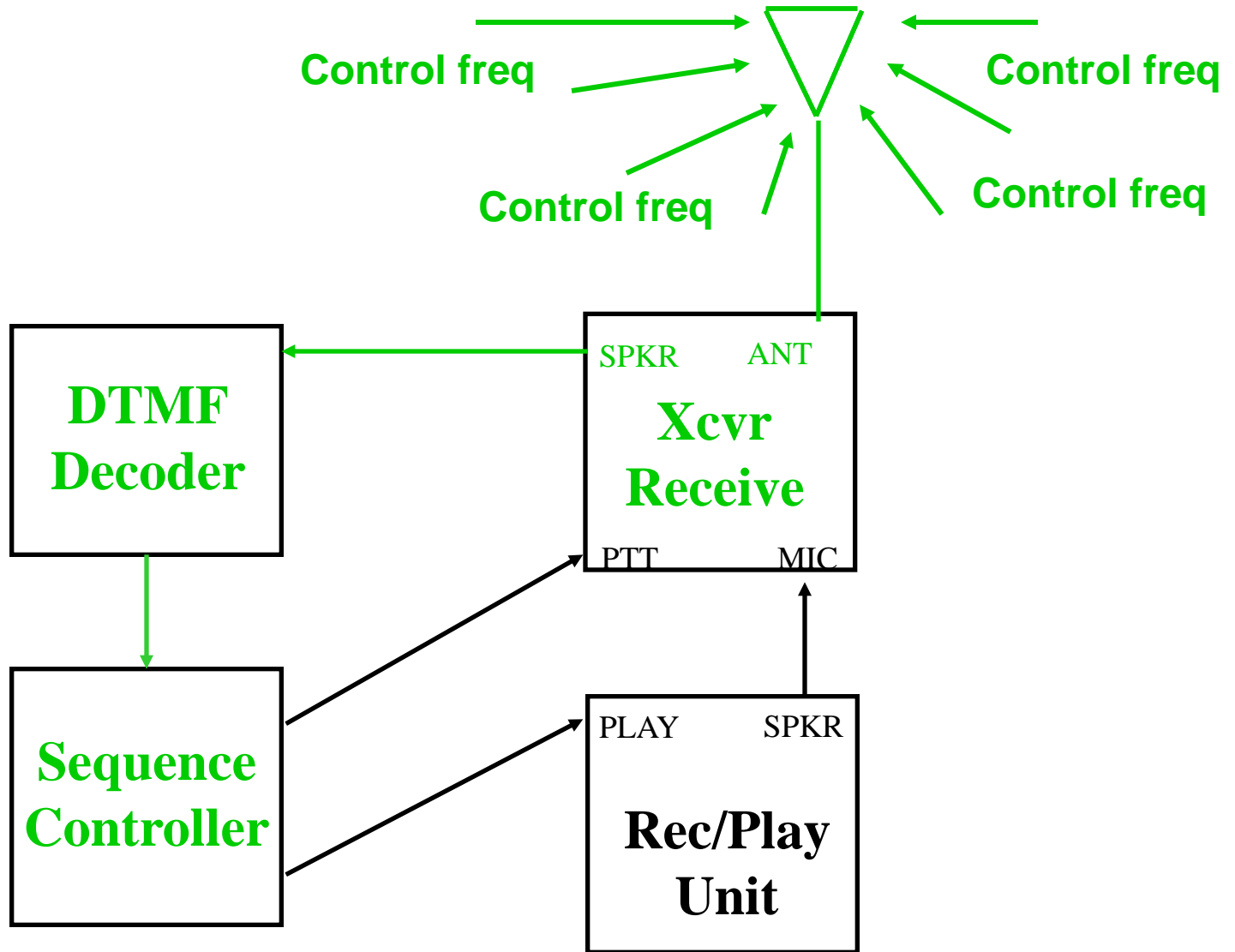
# Big Fox Inside



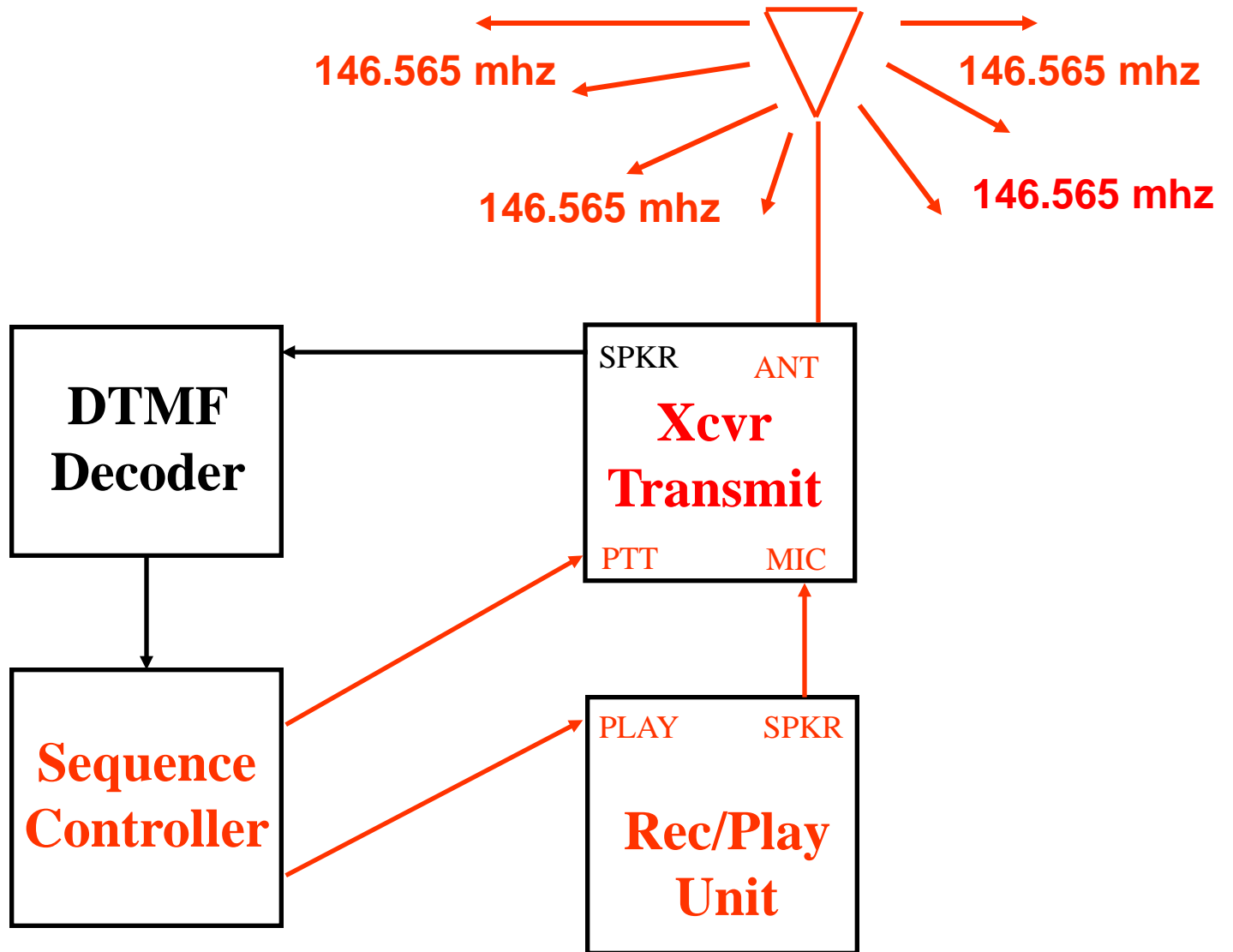
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**Fox Block Diagram**



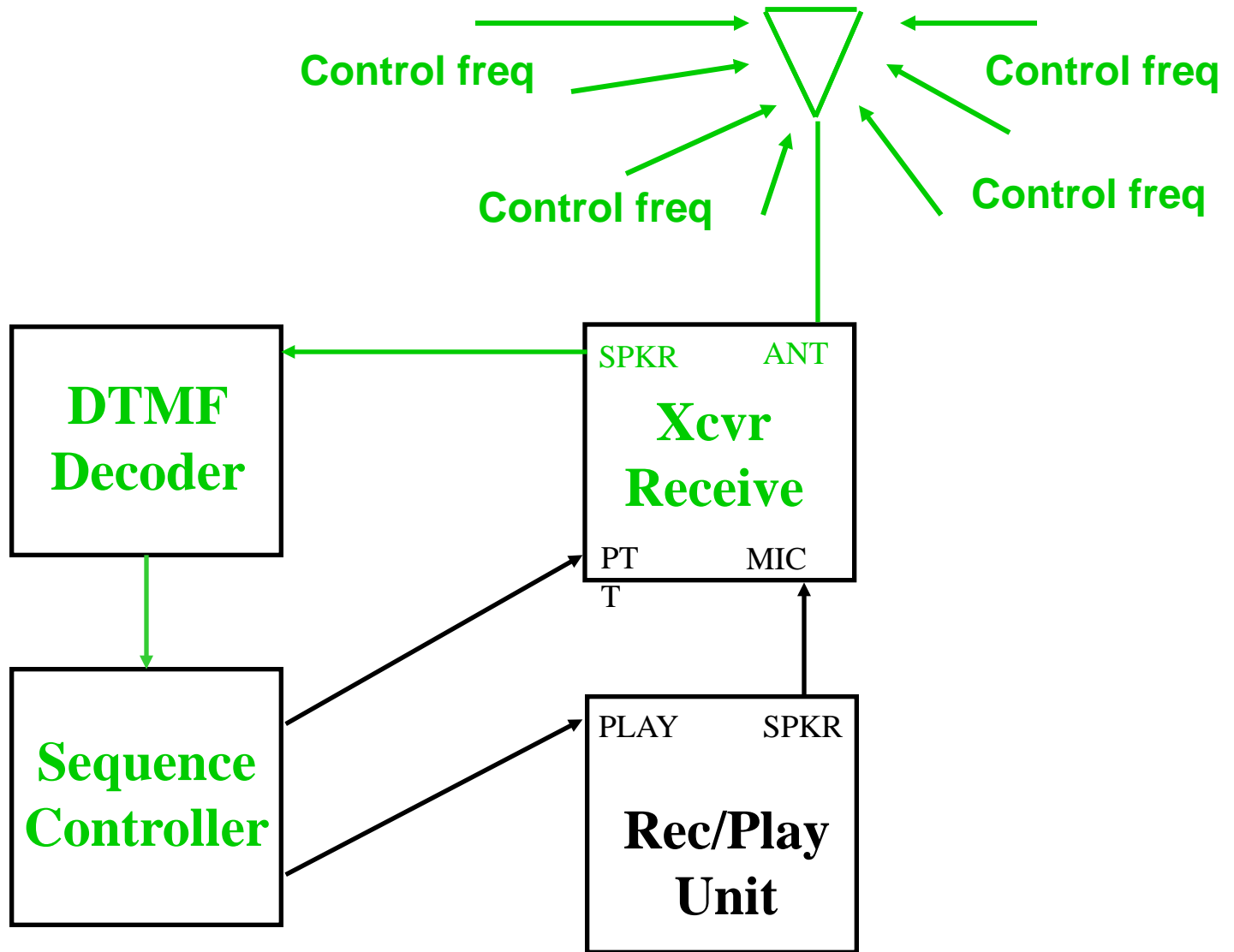
**Fox Block Diagram**  
**Receive Mode (default)**



## Fox Block Diagram

**Transmit mode**





**Fox Block Diagram**  
**Receive Mode**

# Medium Fox Inside





# Small Fox Inside



# The Hunt Master's Rules

- Date, time and location to meet.
- Frequency, mode and duty cycle of fox signal
- If, when and how any clues will be given
- Team sizes and any specific vehicle rules
- Fox is always well labeled and located in a public place
- No transmitting on the fox frequency
- No defacing, relocating, altering of the fox
- What to do when you locate the fox
- Hunt masters can change the rules at any time
- Hunt masters decisions are final



# Basic “Hunting” Equipment

- receiver: scanner or HT with S meter
- antenna(s)
- attenuator(s)
- recent maps of the hunt area
- orienteering equipment
- hiking equipment
- local knowledge
- “intuition”

# Antenna(s)

- Yagi
- Quad
- Looper
- Homebrew
- Rubber duck
- Multiple antennas
- NO antenna

# Tape Measure Yagi





# 2 meter Yagi



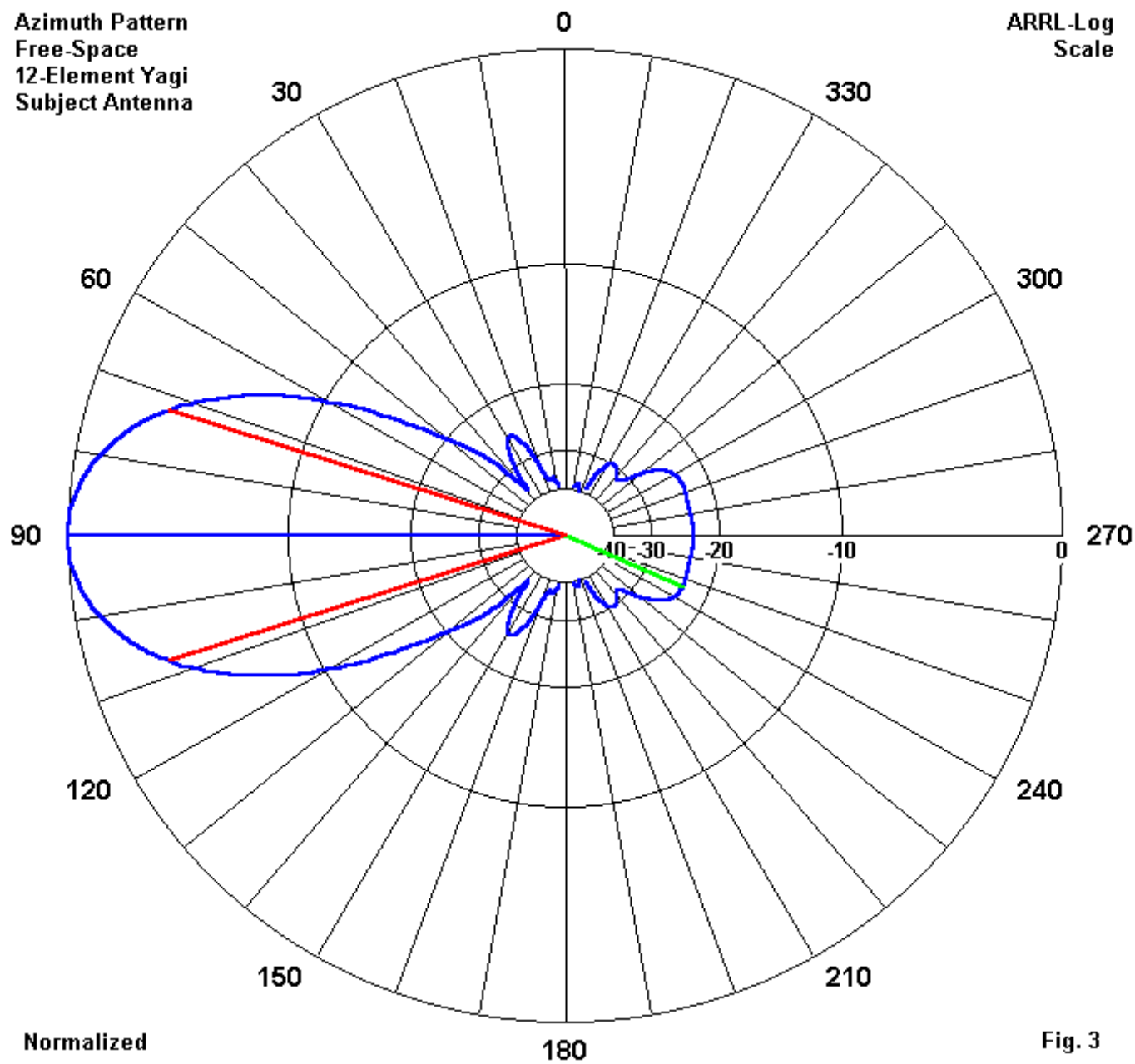


# 2 meter Yagi



Azimuth Pattern  
Free-Space  
12-Element Yagi  
Subject Antenna

ARRL-Log  
Scale



Normalized

Fig. 3

# Phased / Rotating 2 meter Yagi's

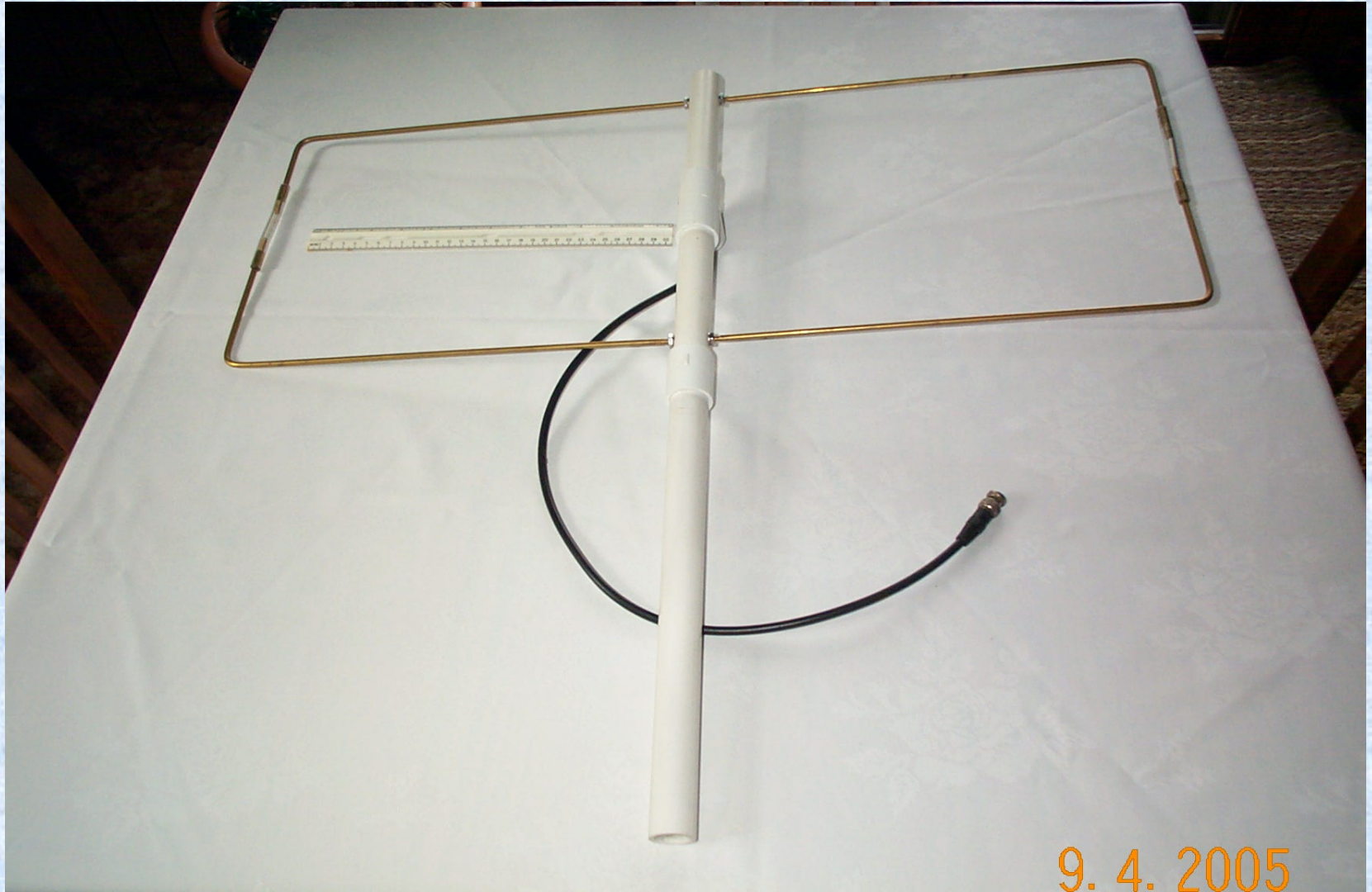


# 2 Meter Rotating Quad





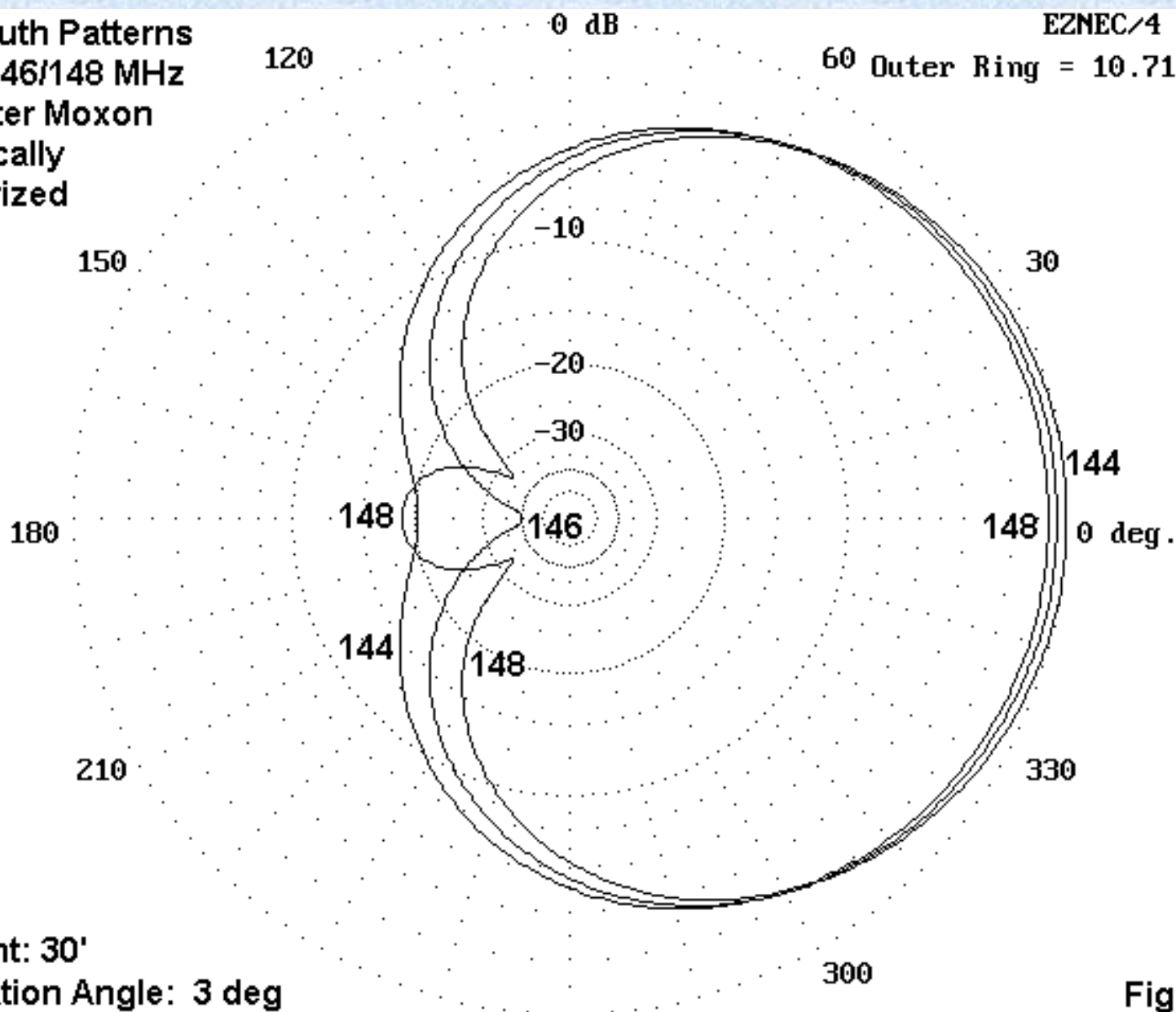
# Moxon Yagi



Azimuth Patterns  
144/146/148 MHz  
2-Meter Moxon  
Vertically  
Polarized

EZNEC/4

60 Outer Ring = 10.71 dBi



Height: 30'  
Elevation Angle: 3 deg

Fig. A

# Well Equipped Orienteer





# Attenuator(s)

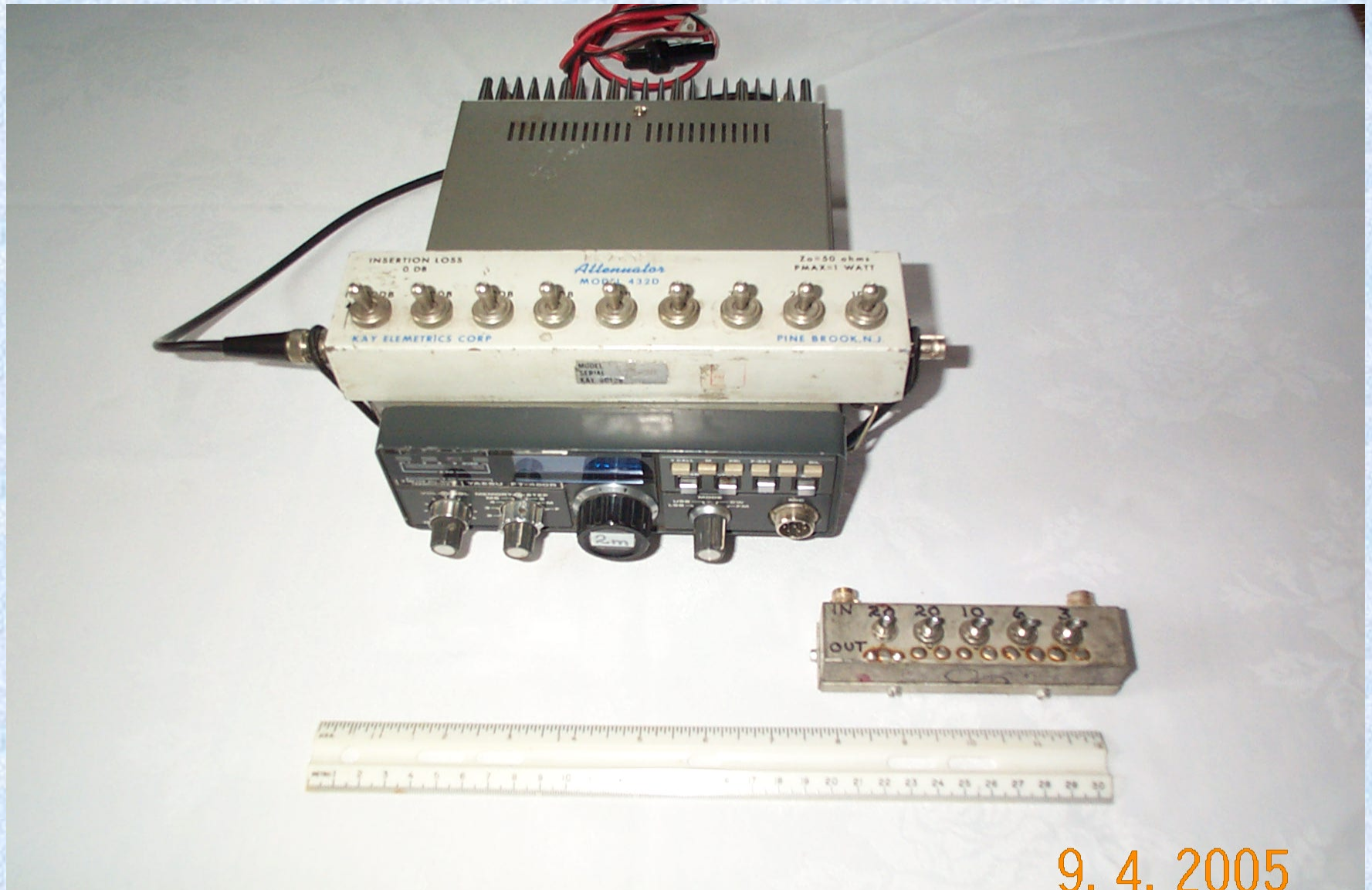
- body fade with rubber duck
- cross polarization
- removing antenna
- tuning off primary frequency
- aluminum tube
- commercial attenuator

# Aluminum Tube



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# Kay Attenuator



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# Advanced “Hunting” equipment

- Double Duckie Direction Finder (DDDF)
- Roanoke Doppler
- Ramsey DF1
- NorthScope
- Off-set attenuator
- VK3YNG “Bluebox”

# DDDF unit



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# Double Duckie Direction Finder (DDDF)

- based on phase arrival times
- good for close in to 1-3 miles out
- susceptible to multipath
- easy to build / inexpensive
- semi compact
- plans are in the ARRL handbook



# Roanoke Doppler Shift Unit





# Roanoke Doppler

- Very popular with serious hunters
- doppler based
- 16 LED readout
- susceptible to multipath
- kit - board - components - manual
- <http://www.dfsystems.com/dpic.html#top>

# Ramsey DF1



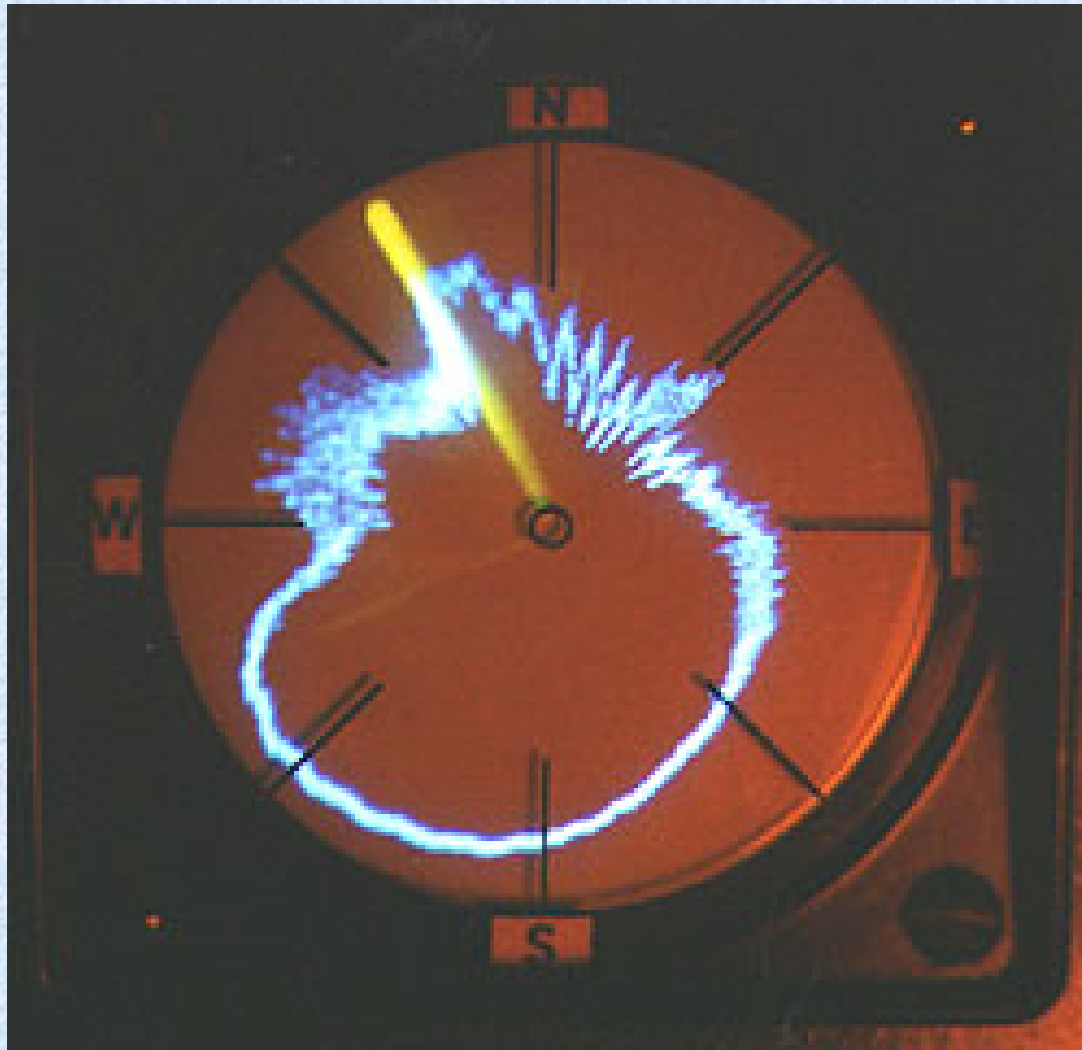




# Modified SB620 “NorthScope”



# NorthScope Display



# NorthScope

- designed by Joe Moell K0OV
- based on Heathkit SB620 “Scanalyzer”
- plans in Aug and Sept 97 “73” magazine
- can be used with horizontal polarization
- not affected by multipath
- “radar like” display
- rates a 10 on the “cool” (built it myself) scale!



# Offset Attenuator



# Offset Attenuator

- Based on secondary oscillator
- Analog control attenuates strong signals
- Ideal for close in hunting
- <http://www.homingin.com/joek0ov/offatten.html>  
#baofeng

# VK3YNG “Bluebox”





# VK3YNG “Bluebox”

- Newer technology RDF sniffer
- Very compact Radio/RDF together
- 120MHz and 144MHz bands Analog control attenuates strong signals
- distant weak signals to very close "sniffing"
- Full auto-ranging operation

**So,**

**where**

**do**

**you**

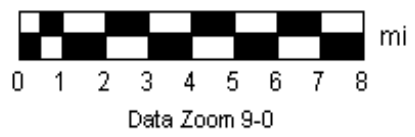
**hide**

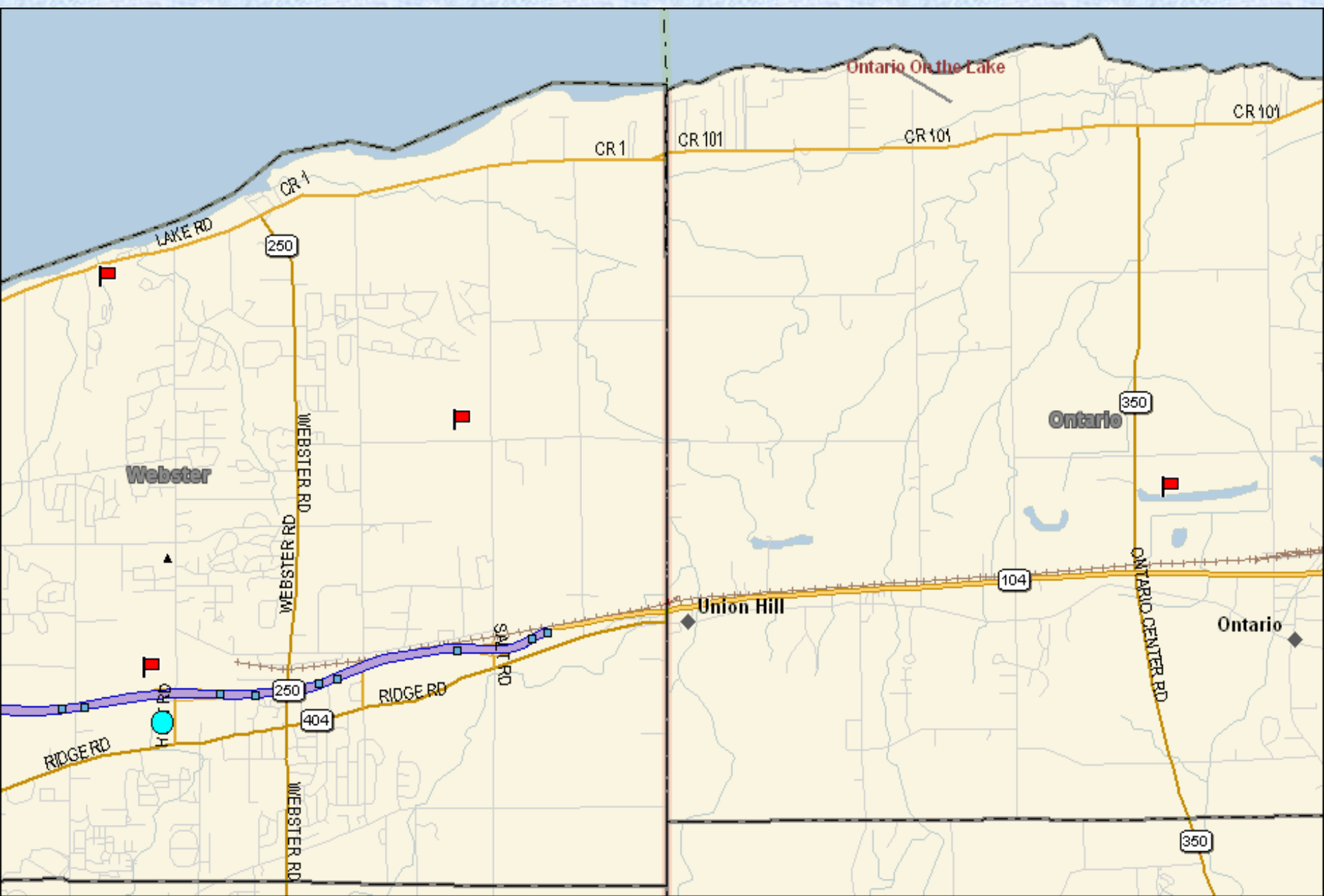
**a**

**Fox?**



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Children's Inc.

Children's Inc.  
Excellence in Backup Child Care

1









3

I Climbed To The Top!  
Charlotte Genee  
Lighthouse

8 MUDDYM  
9 BISHP&FF  
10 EMMA'S

OUT TO SEA





**HEROES**

**WALKIE TALKIE**  
BATTERY OPERATED

- ★ Safety Flexible Antenna
- ★ Walkie Talkie With Morse Code Signals
- ★ Requires 1 "9V" Battery (Not Included)

**Range up to 100 FT.**

Foldable Antenna

**XARC Spring 2003 Fox Hunt**

*Mt. Airy Park Excludes to Hatteras Hill Trail System*

May 10, 2003

Third Place

Huntermaster  
[Signature]

**XARC Spring 2003 Fox Hunt**

*Mt. Airy Park Excludes to Hatteras Hill Trail System*

May 10, 2003

Third Place

Huntermaster  
[Signature]

Susquehanna  
2003



# Awards and Trophies



**X**erox  
**A**mateur  
**R**adio  
**C**lub

**First  
Place  
Finish**  
**Fox Hunt 2002**

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# Hunting hints

- arrive rested and prepared for anything
- be aware of and follow the rules
- Never make assumptions
- Finally... hunt deliberately but fast!!



**Questions?**