

Hidden Attic Antenna

w6nbc.com/slides.html

A row of modern, multi-story houses in a suburban neighborhood. The houses feature various siding colors like beige, brown, and grey, with white trim and gabled roofs. A white pickup truck is parked on the street in front of one of the houses. The sky is clear and blue.

A Ham's Attic
A Favorite for Hiding
Antennas

Neighbors
Homeowners Association

Best Viewer Email Ever

From: ki5akh@yahoo.com,

Subject: Building One

\$29.63!

**Having your 16 year old grandson
put it up in the attic**



\$2600

**The Foot
was
deductible!**

HF Attic Dipoles

80m 128 feet



40m 64 feet



20m 32 feet



10m 16 feet



The Solution?

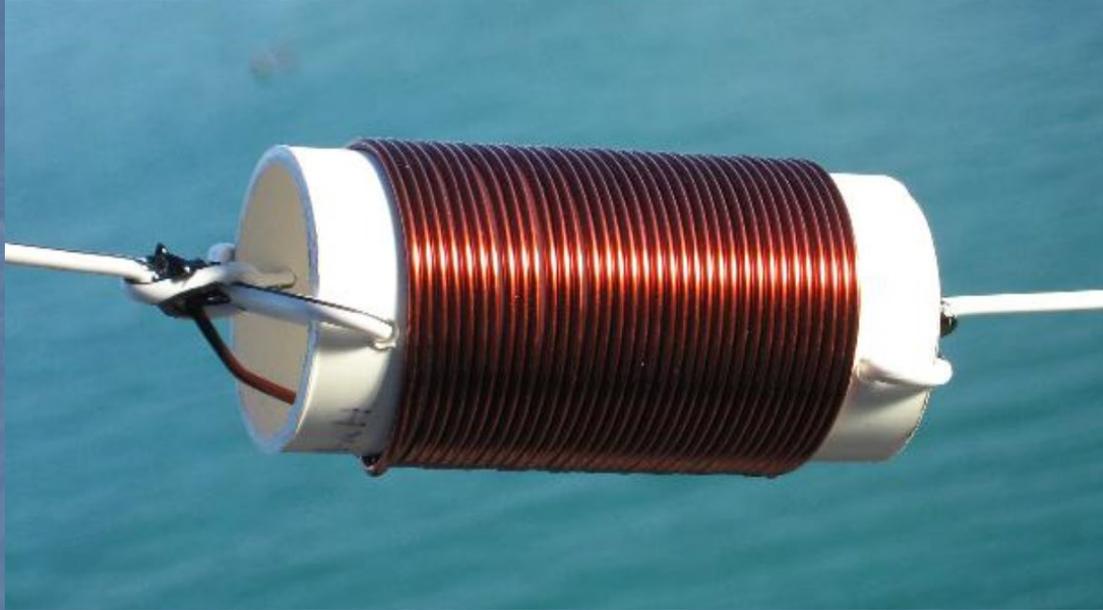
A Big

High Inductance

High Efficiency

LOADING COIL

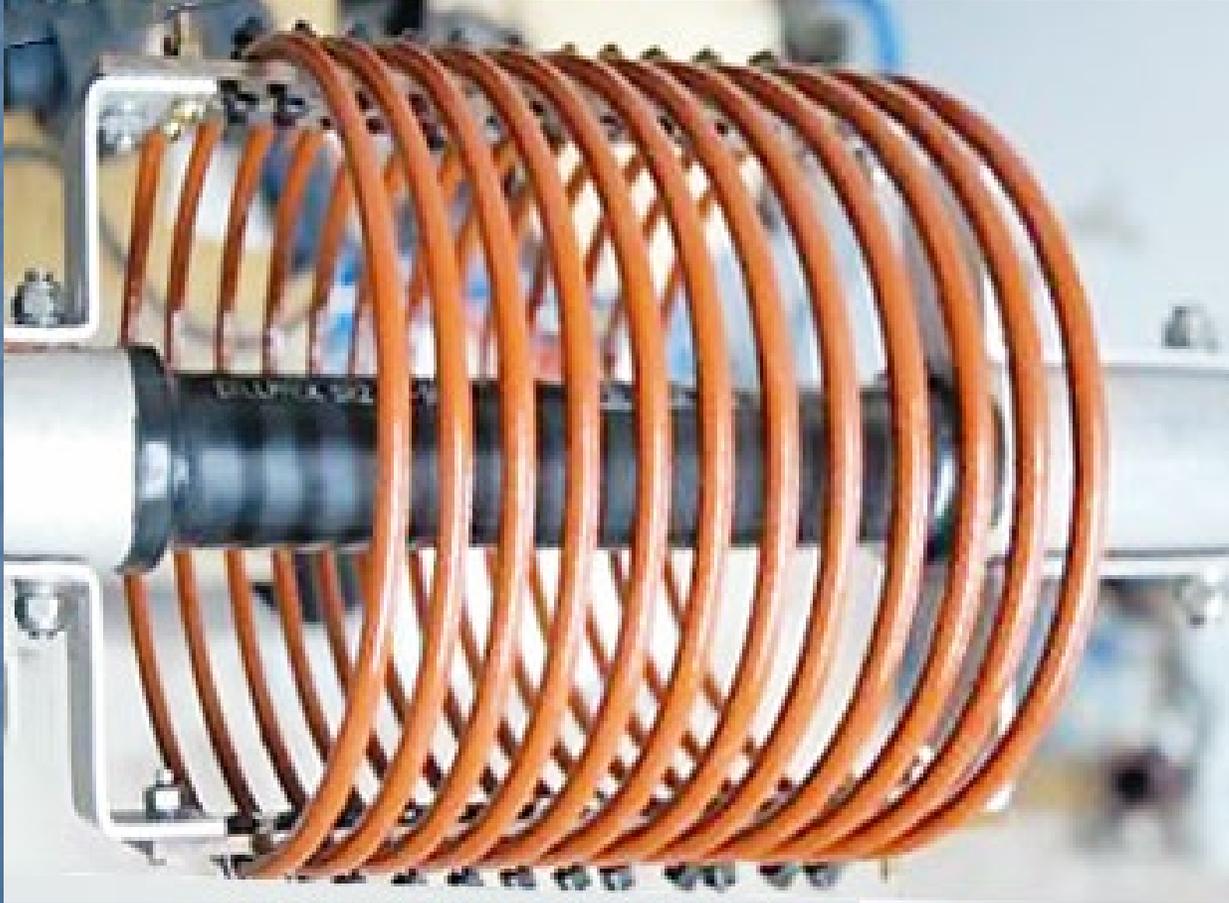
HF Loading Coils



NOT Efficient



For Efficiency



**“Big with
Wide
spacing is
Beautiful”**



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Plumbing > Pipe & Fittings > Copper Pipe & Fittings > Copper Pipe

Item # 4198 Model # D 08050PSE

Mueller Streamline 1/2-in x 50-ft Copper Refrigeration Tube Coil

25 Ratings



4.4 Average

91%

Recommend this product



Community Q&A
View Now



\$91.98

- The coil is cleaned and capped to keep contaminants from entering the tubing
- Mueller streamline product is NSF approved

Pipe Diameter

1/2-In



Pipe Length

50-Ft



-

1

+

ADD TO CART

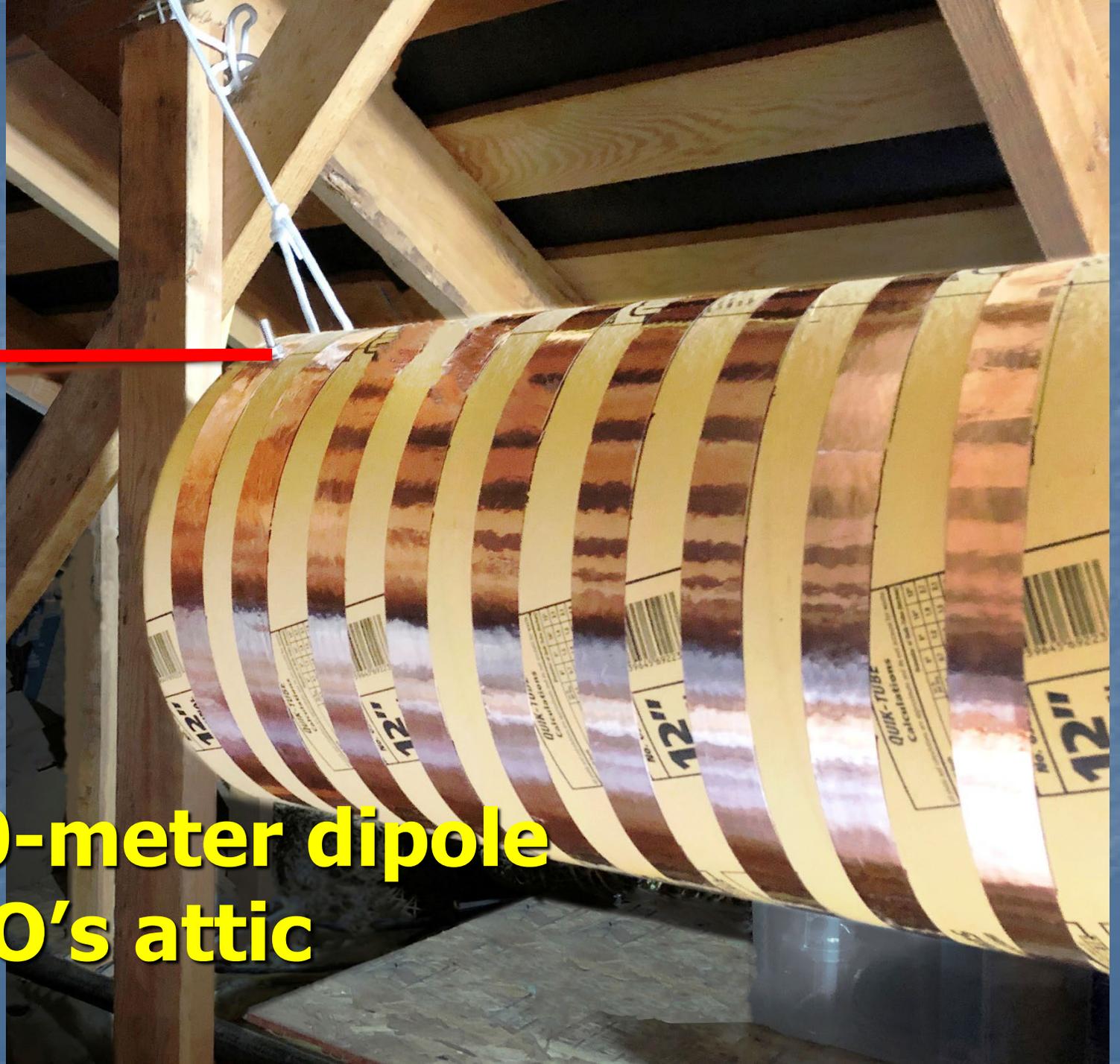


Less Expensive High- Efficiency Attic Dipole Loading Coil

**Add Some
Wire**

**For a
Shortened
Antenna**

**1/3 length 40-meter dipole
WB2FX0's attic**





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SAKRETE >

12 in. x 48 in. Tube for Concrete

★★★★★ (122) [Write a Review](#) [Questions & Answers \(53\)](#)

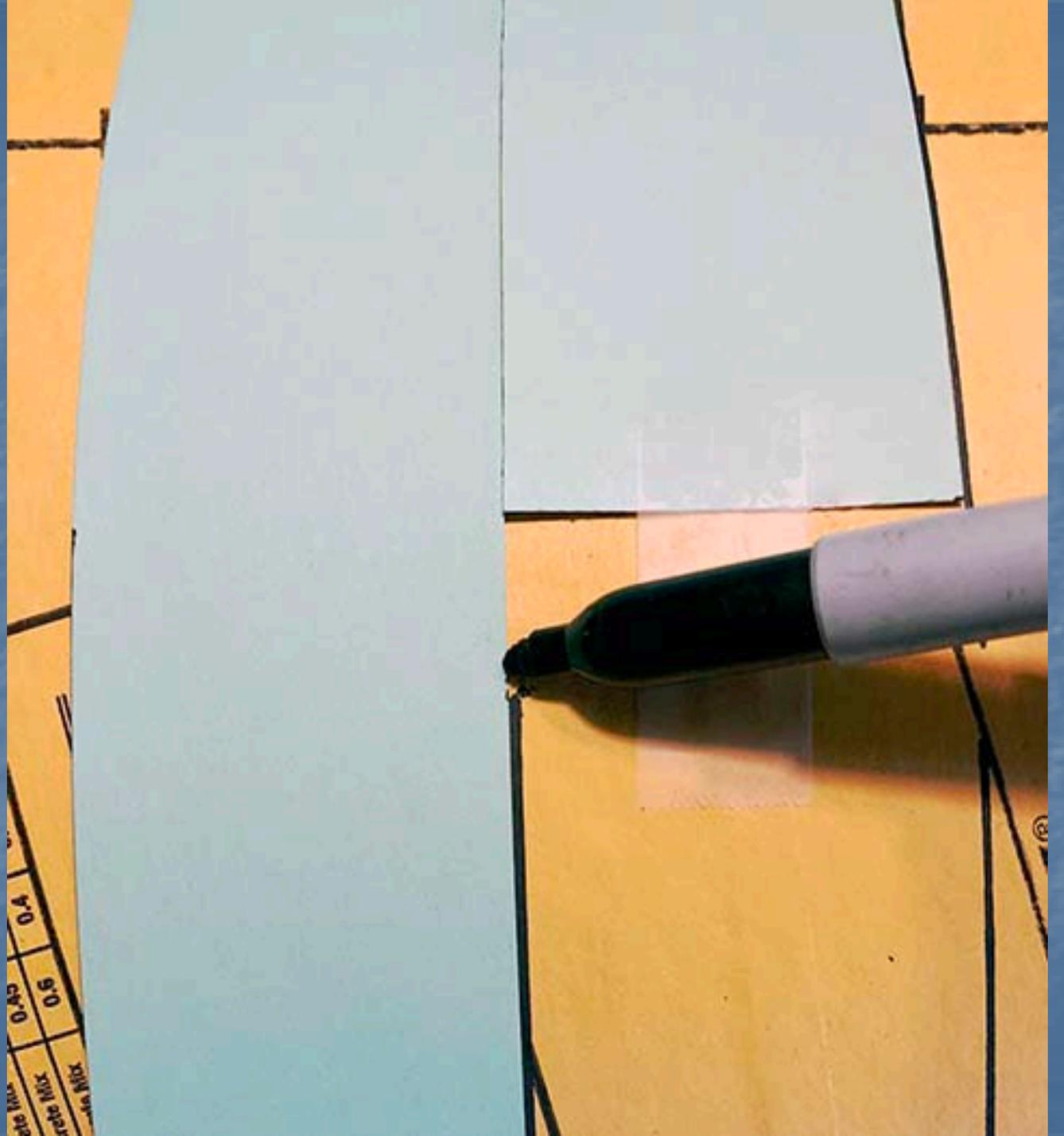
- Makes pouring concrete footings and posts easy
- Can be used for foundations, round columns and piers
- Inexpensive time-saver for a professional finish

\$15⁹⁷

Aluminum Same as Copper



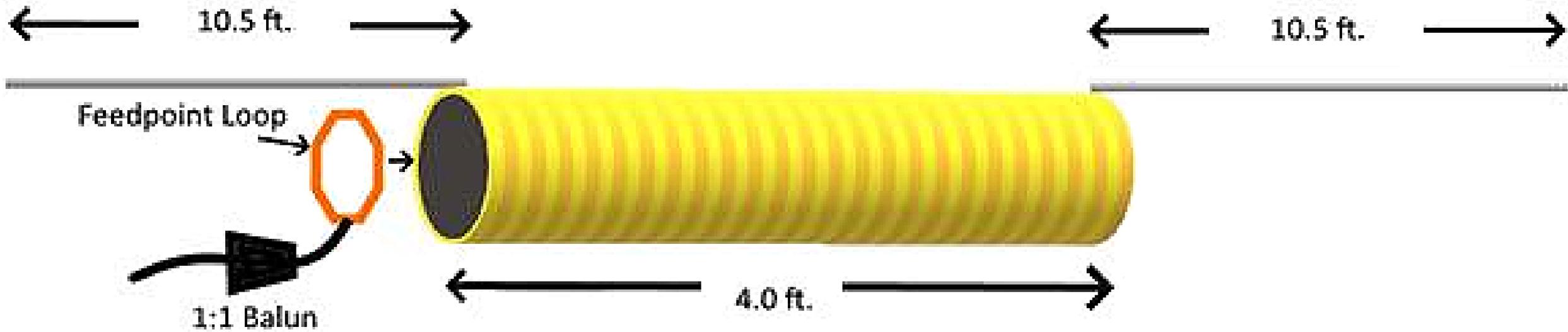
**2x 2 in.
paper or
flexible
plastic
guide-Line
marking
strip**



**Many Possible
Uses for the Coil**

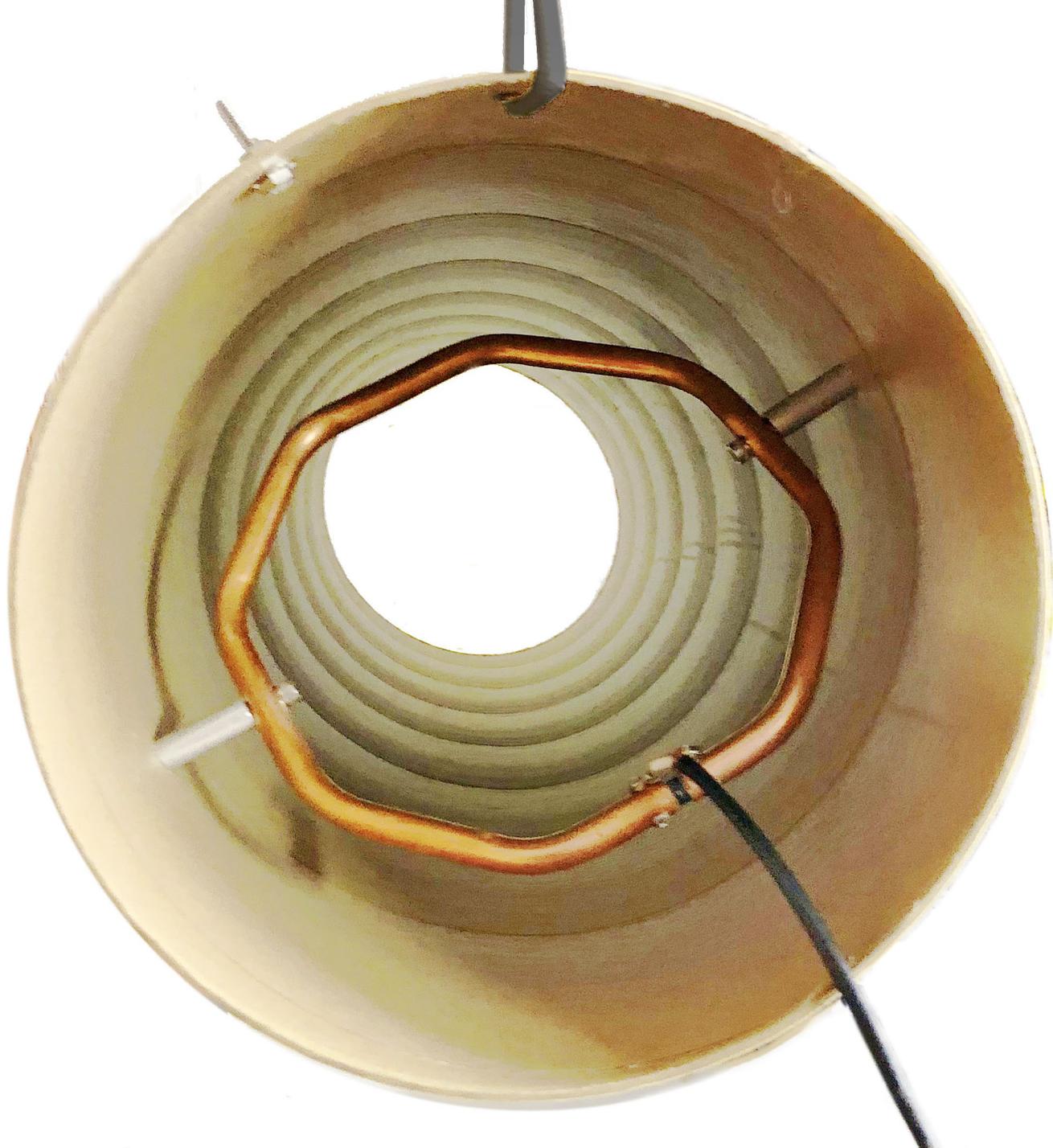
**A 40-meter $\frac{1}{3}$
size Example**

**23 turns 1 in. tape, spaced 1 in.
On 4 ft. 12 in. diameter cardboard tube**



40-meters

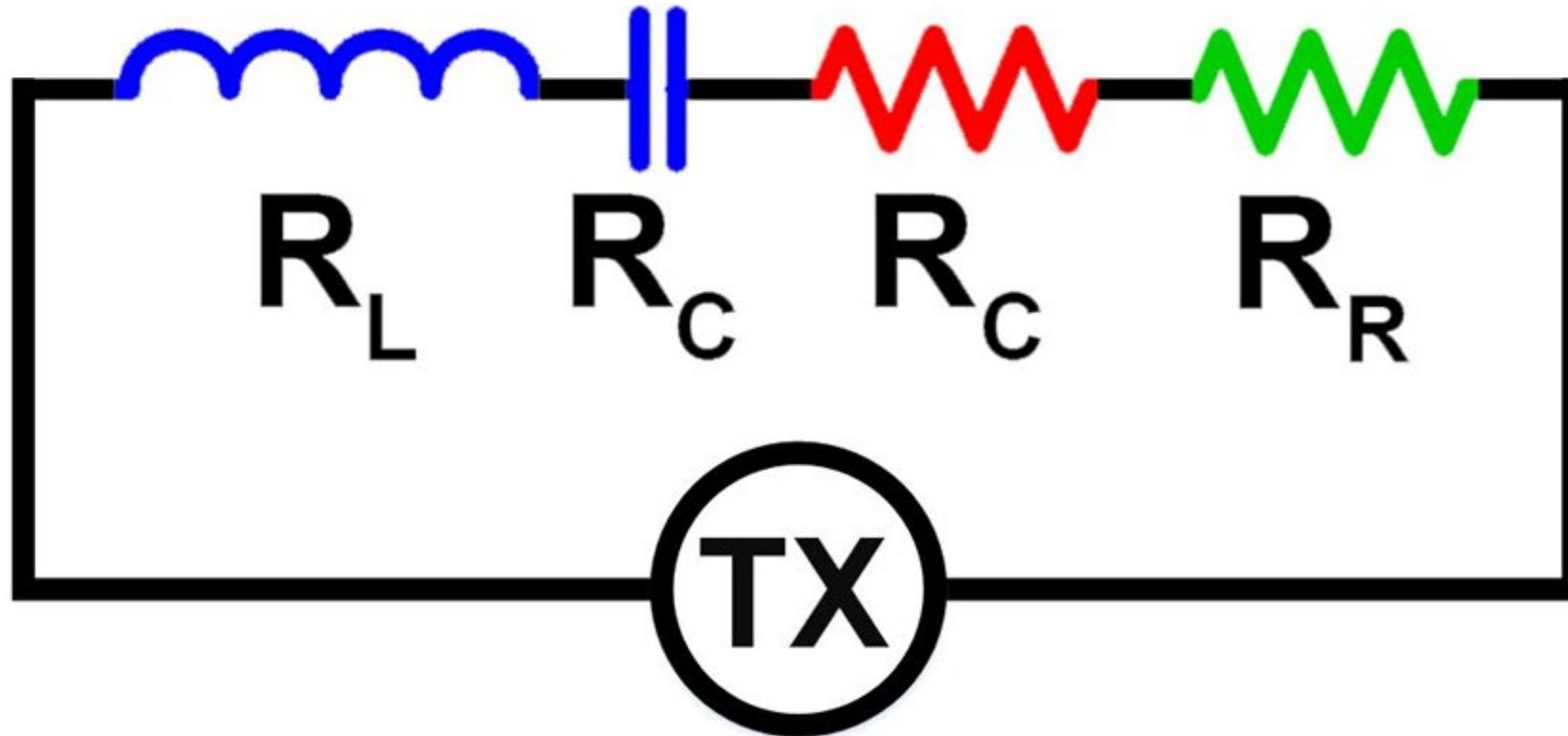
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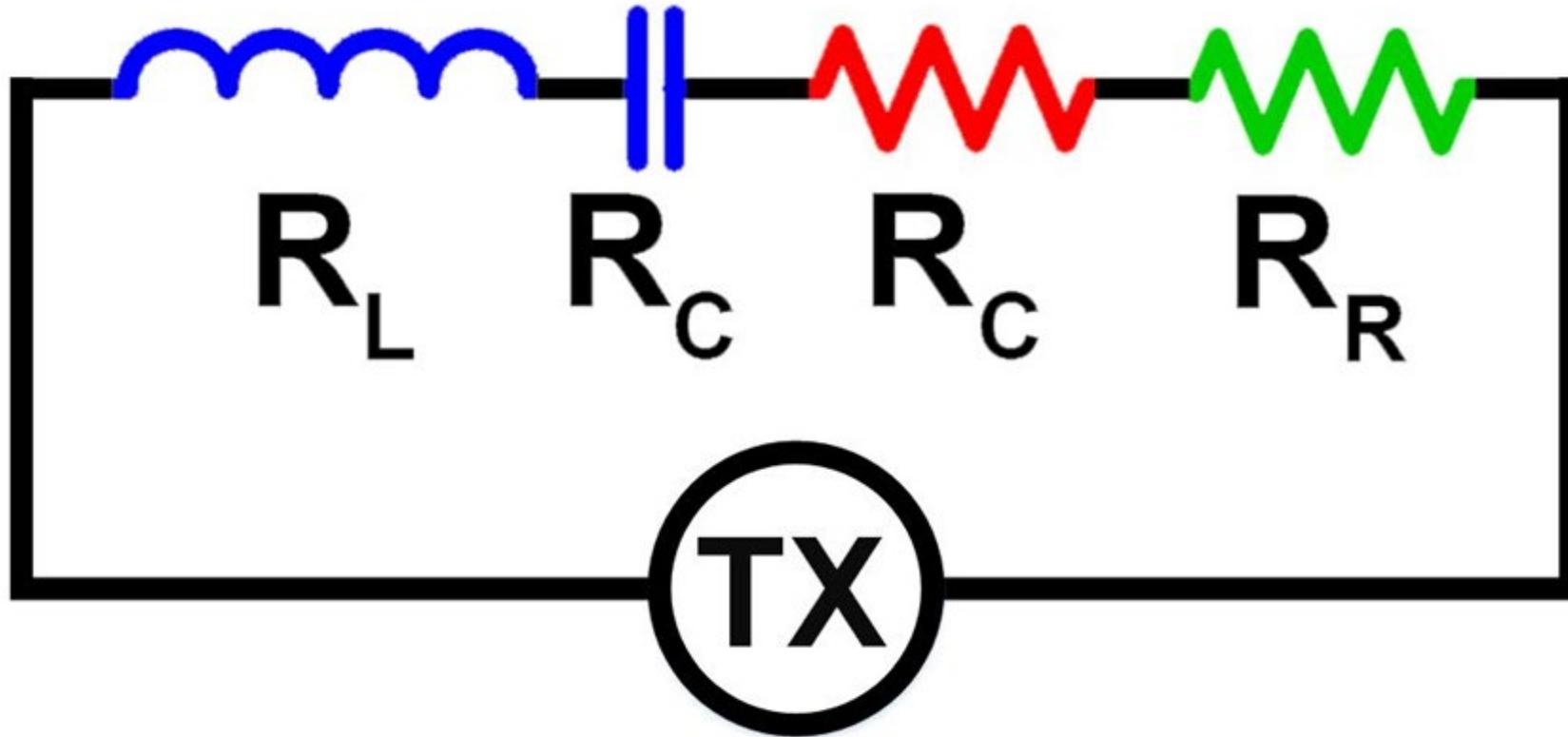
**1/2 in.
Rigid
Copper
Pipe**

**“ But Why
Such a
Big Coil?”**

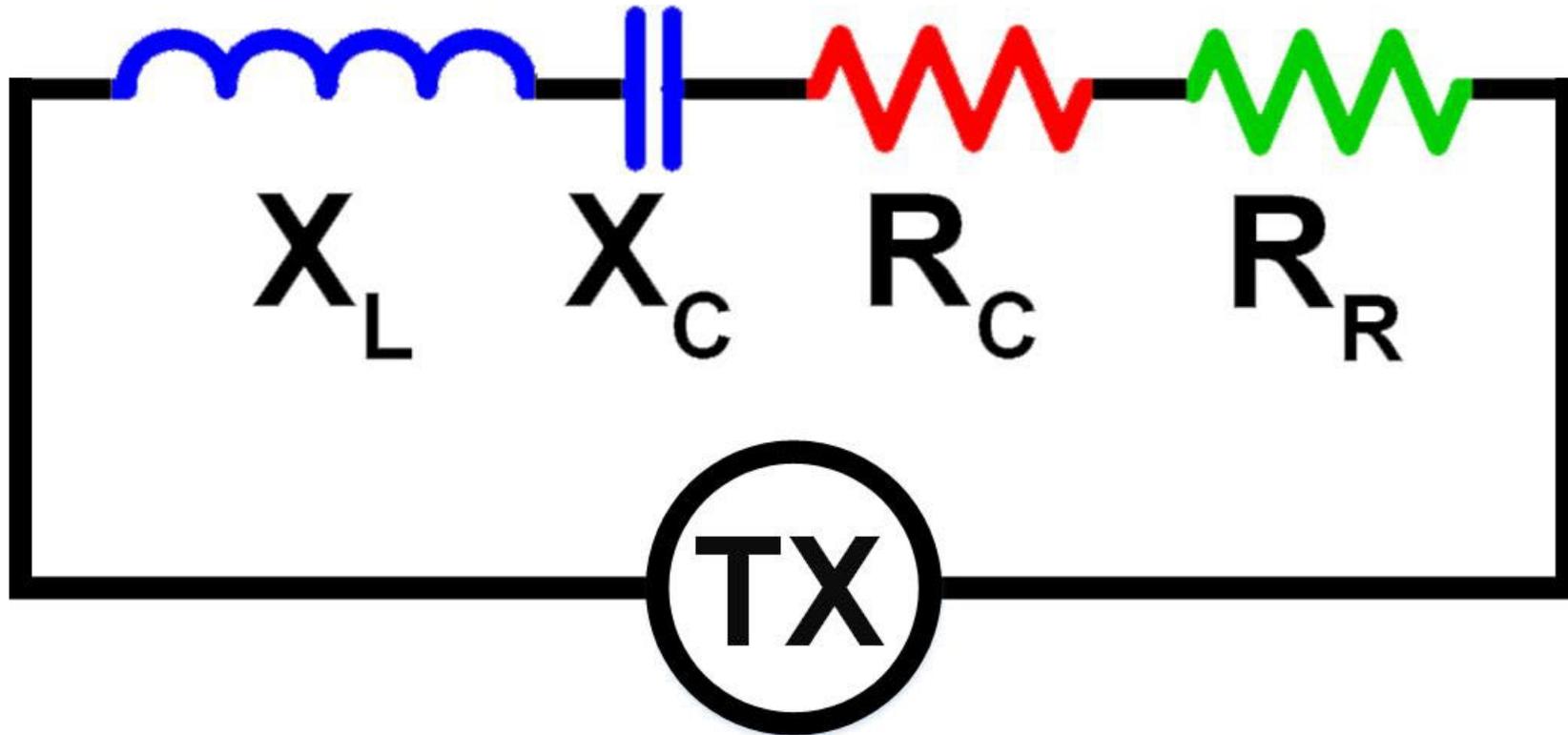
Equivalent Circuit of an Antenna



**Transmitter voltage needs a LOAD
to make power → EM waves**



For Tuning **Consume**
All Pass TX Power
Use No Power Power



Conductor Resistance R_C

Makes



Radiation Resistance R_R

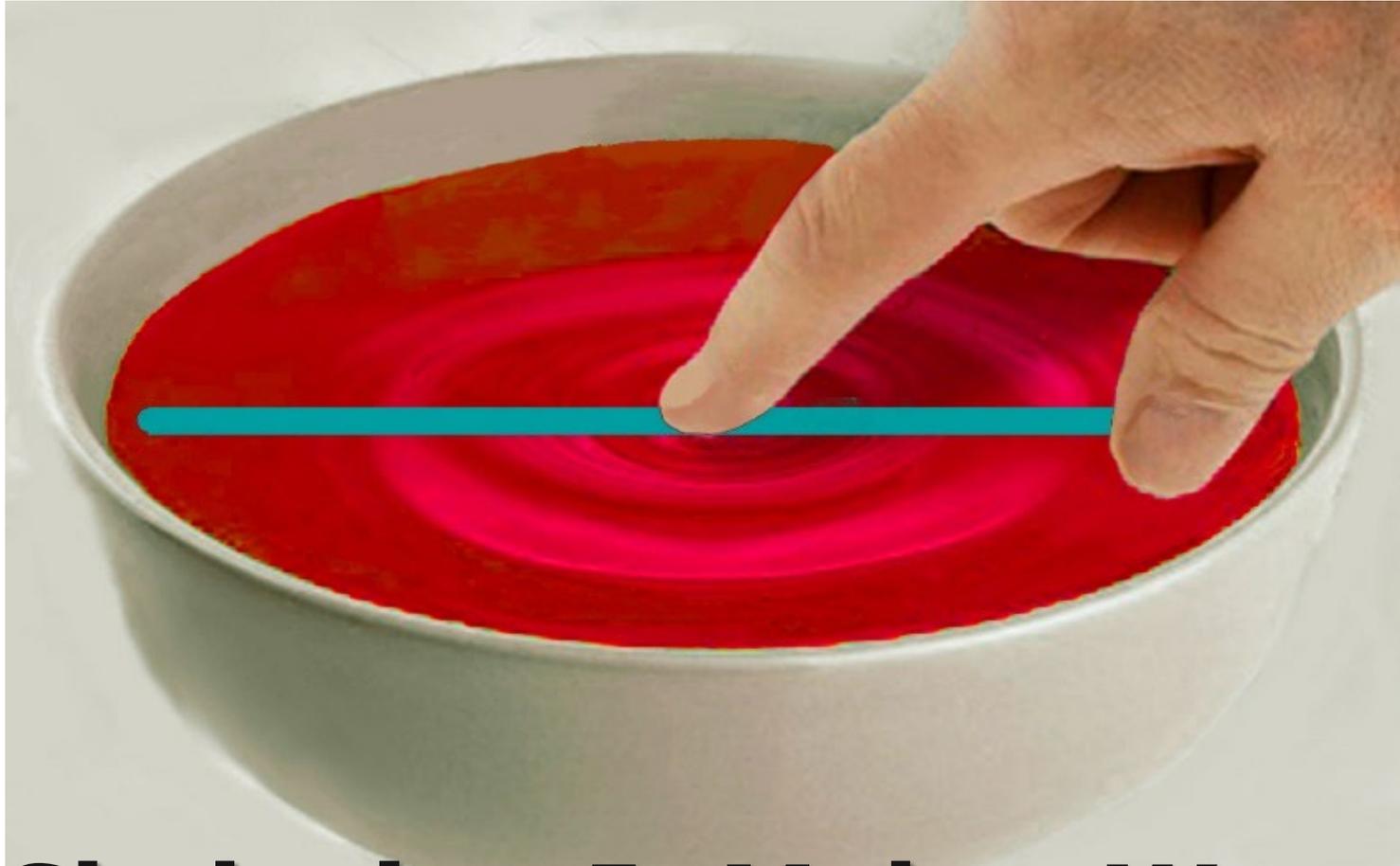
Makes RADIO WAVES



Radiation Resistance – R_R



Radiation Resistance – R_R



Shake it – It Makes Waves

**Is a REAL
resistance
created
In an
antenna
by space**

Important Principle

Small Antennas

How Size Changes

R_C & R_R

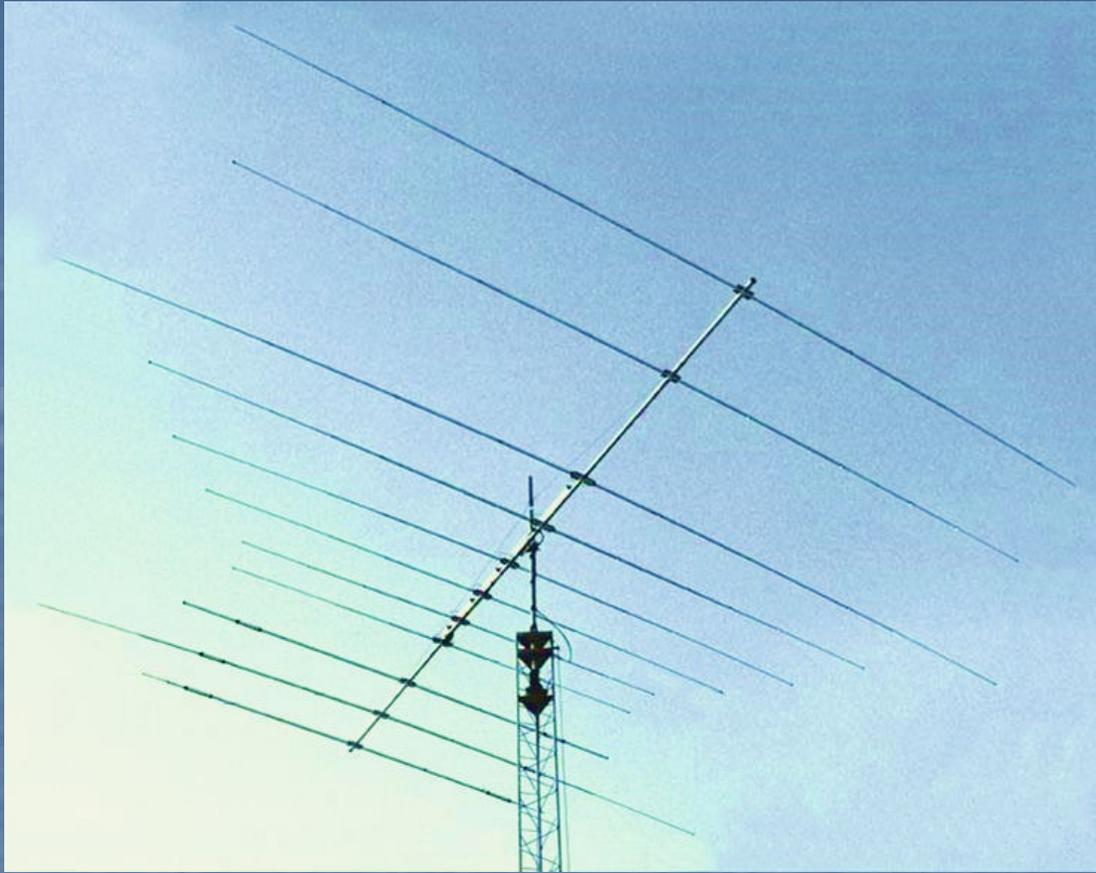
$R_C \downarrow$ directly with size
 $1/2 \text{ size} - 1/2 R_C$

$R_R \downarrow$ square of size
 $1/2 \text{ size} - 1/4 R_R$

Therefore

**If an antenna is made smaller,
radiation resistance gets smaller
faster than conductor resistance**

Efficiency goes down – Loss goes up



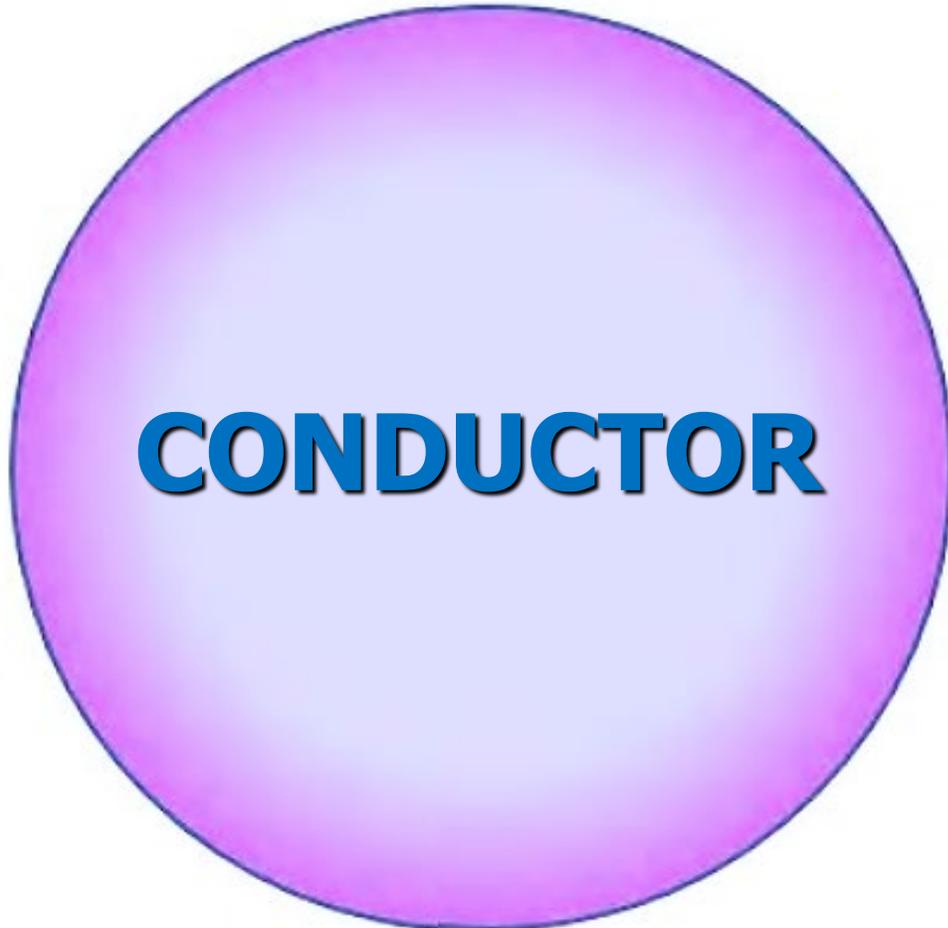
LARGE $\approx \lambda$
Eff. – High



SMALL $\approx \lambda$
Eff. – Low

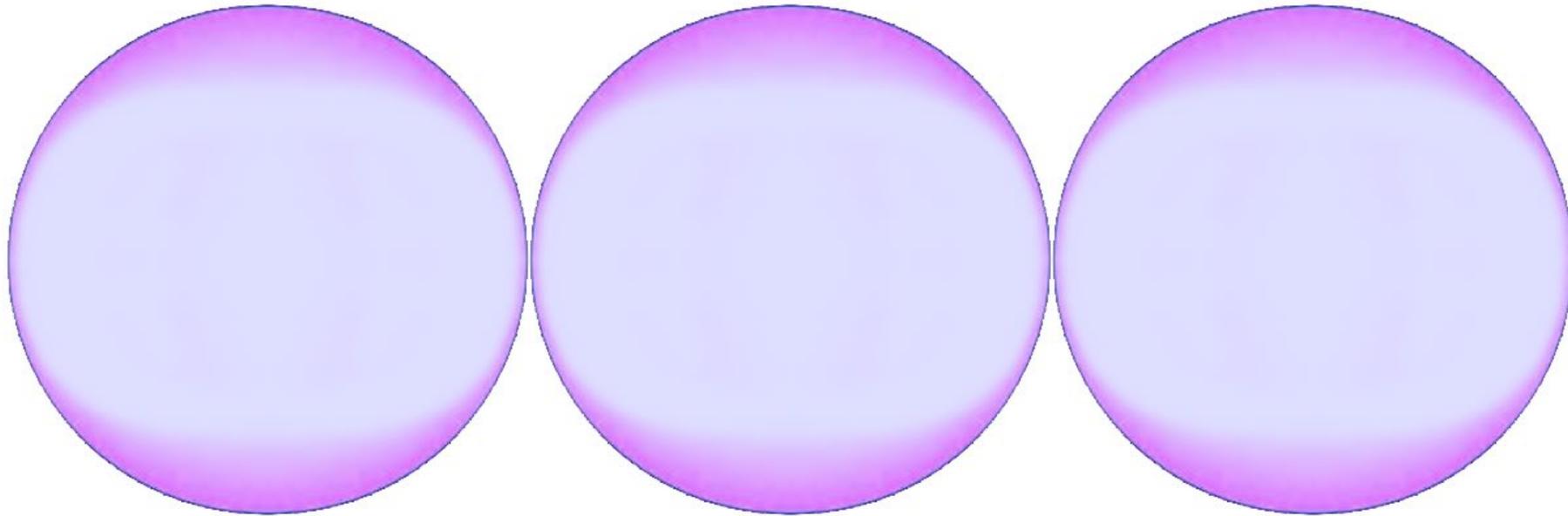
**Turns too
Close**

Skin Effect Another Loss



Greater
 R_c

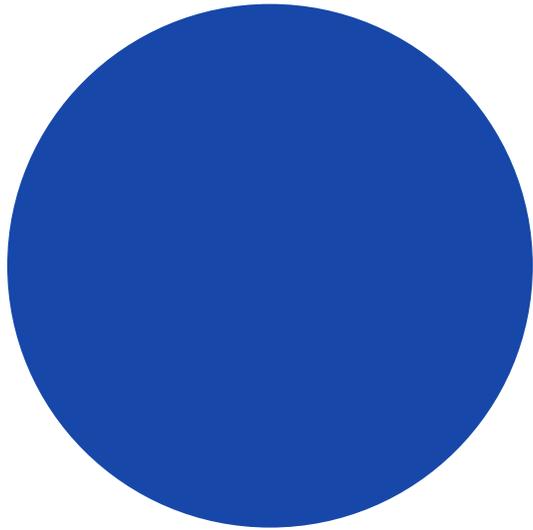
Adjacent Turn Loss



3:1 Spacing – no loss

Handling Power

Flat = Round ?



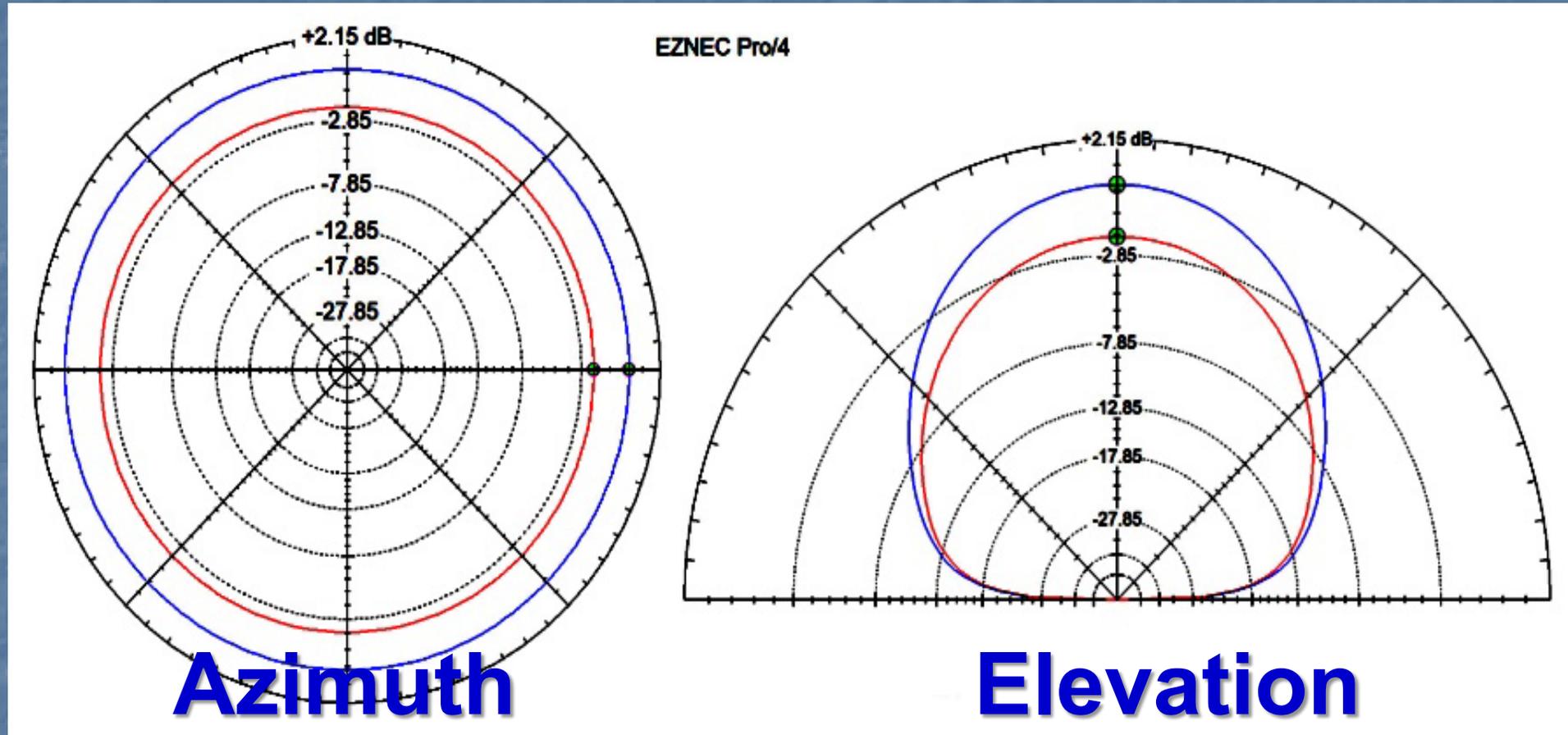
Circumference = Width

e.g. 3/8 tubing = 1 in. 1.5 mill tape

(Also works for NEC modeling)

**How Does
This Antenna
Compare?**

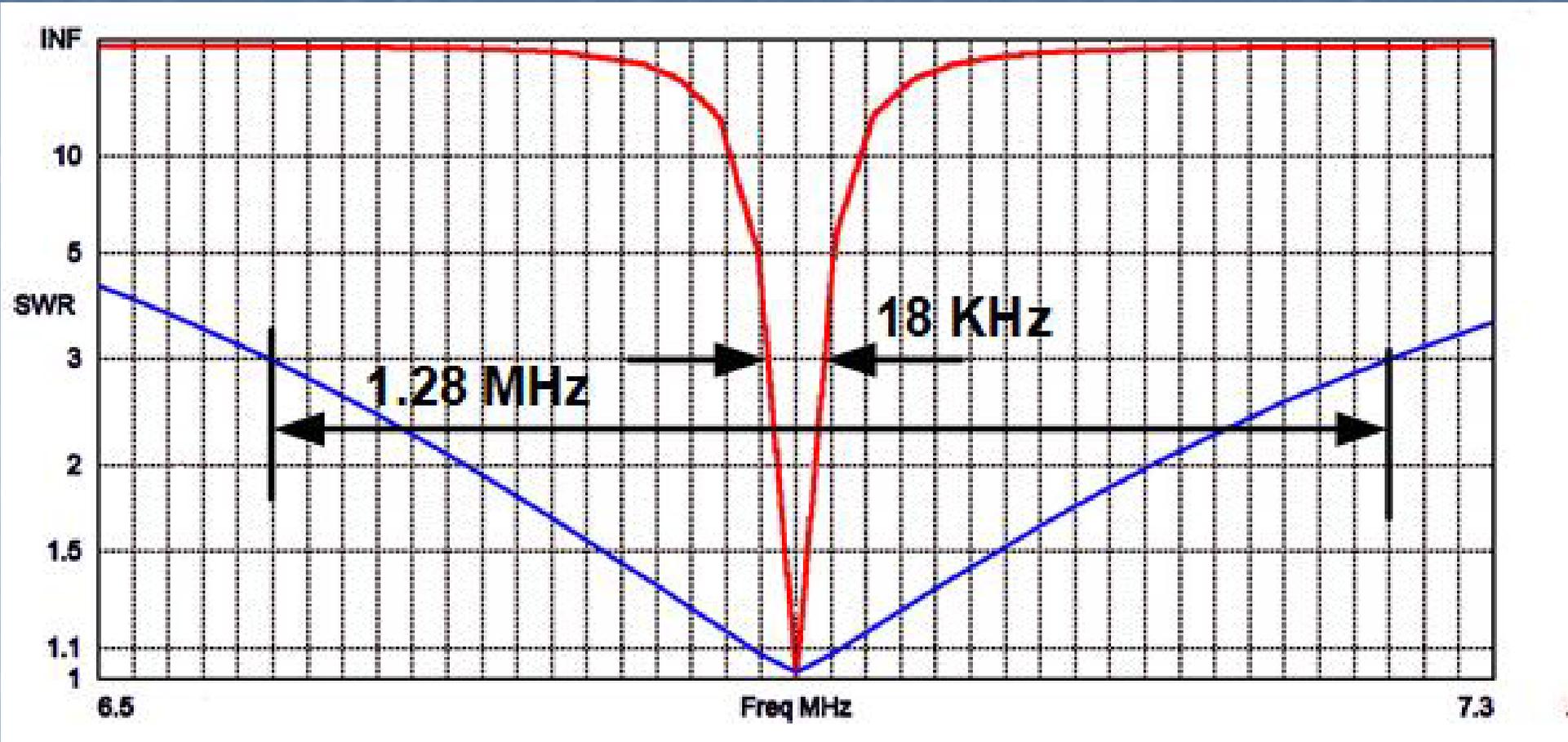
Radiation & Gain



Blue – full size **Red – shortened to 1/3**

Tune and Match

SWR / Bandwidth



Needs some way to tune

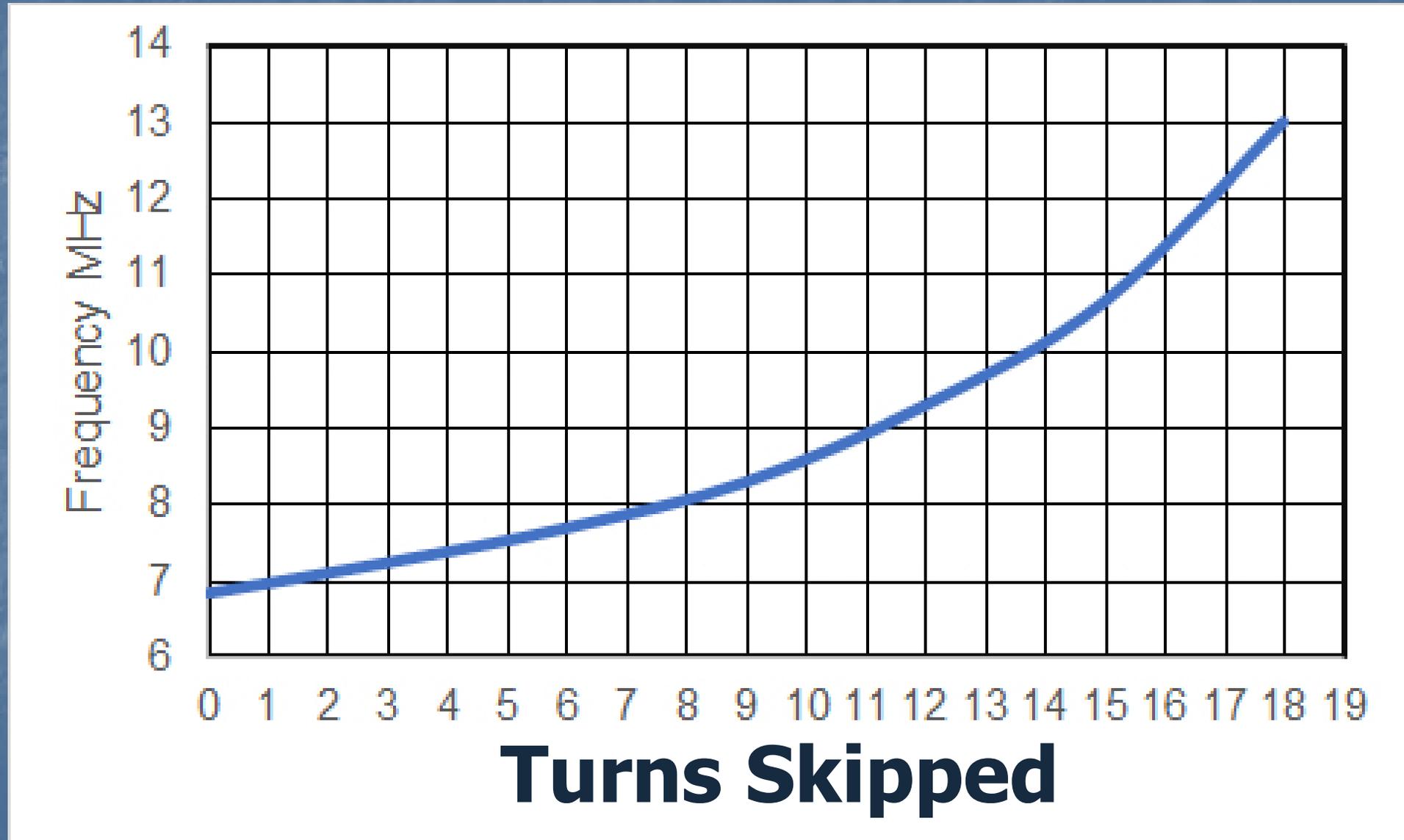
Fine Tuning Band Tuning

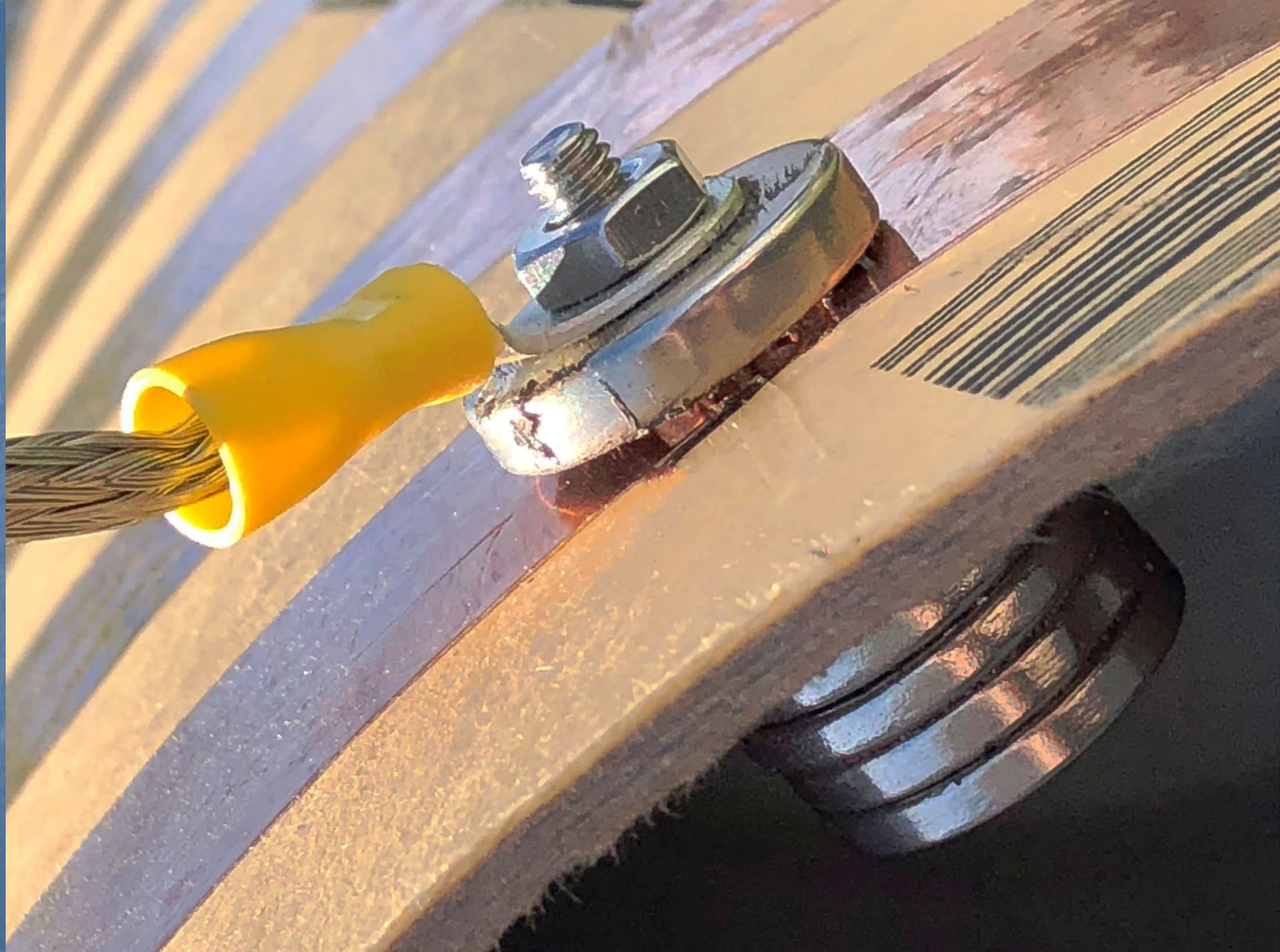
NEW

QUICK-TUBE®
Calculations are approximate and do not account for waste.
Calculations are approximate and do not account for waste.

	Diameter of Quick-Tube (Inches)					
	6"	8"	10"	12"	14"	16"
cu. ft. per bag	0.3	0.7	1.0	1.5	2.1	2.7
bags of Concrete Mix	0.375	0.5	0.75	1.0	1.3	1.8
bags of Concrete Mix	0.45	0.75	1.0	1.5	2.1	2.7
bags of Concrete Mix	0.6	1.0	1.5	2.1	2.7	3.6

Skipping Turns – Band Change







Neodymium Rare Earth Countersunk Ring Magnets N48 3/4 x 1/8 Inch (20 Pack)

by [Thinktoo](#)

Price: **\$14.39** & **FREE Shipping**

Not eligible for Amazon Prime.

Eligible for [amazon smile](#) donation.

Color: **20 Pack**



- EXCELLENT QUALITY - These cup magnets are built in a steel cup and coat with three layers of nickel, copper and nickel that resists rust, anti-fracture scratch-resistant, sturdy and durable, greatly extending the life of the magnet.
- SMALL SIZE WITH POWERFUL MAGNETIC FORCE - Each neodymium magnet...

Tuning Options

- **Remote Auto-tuner**
- **Relay-switched L/C**
- **Motor-driven tuner**



! WARNING

Tune at the Antenna

NOT from the Shack



A Ham's Attic
A Favorite for Hiding
Antennas

Try a Short
Loaded Dipole

DØGGY



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"That's all Folks!"

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