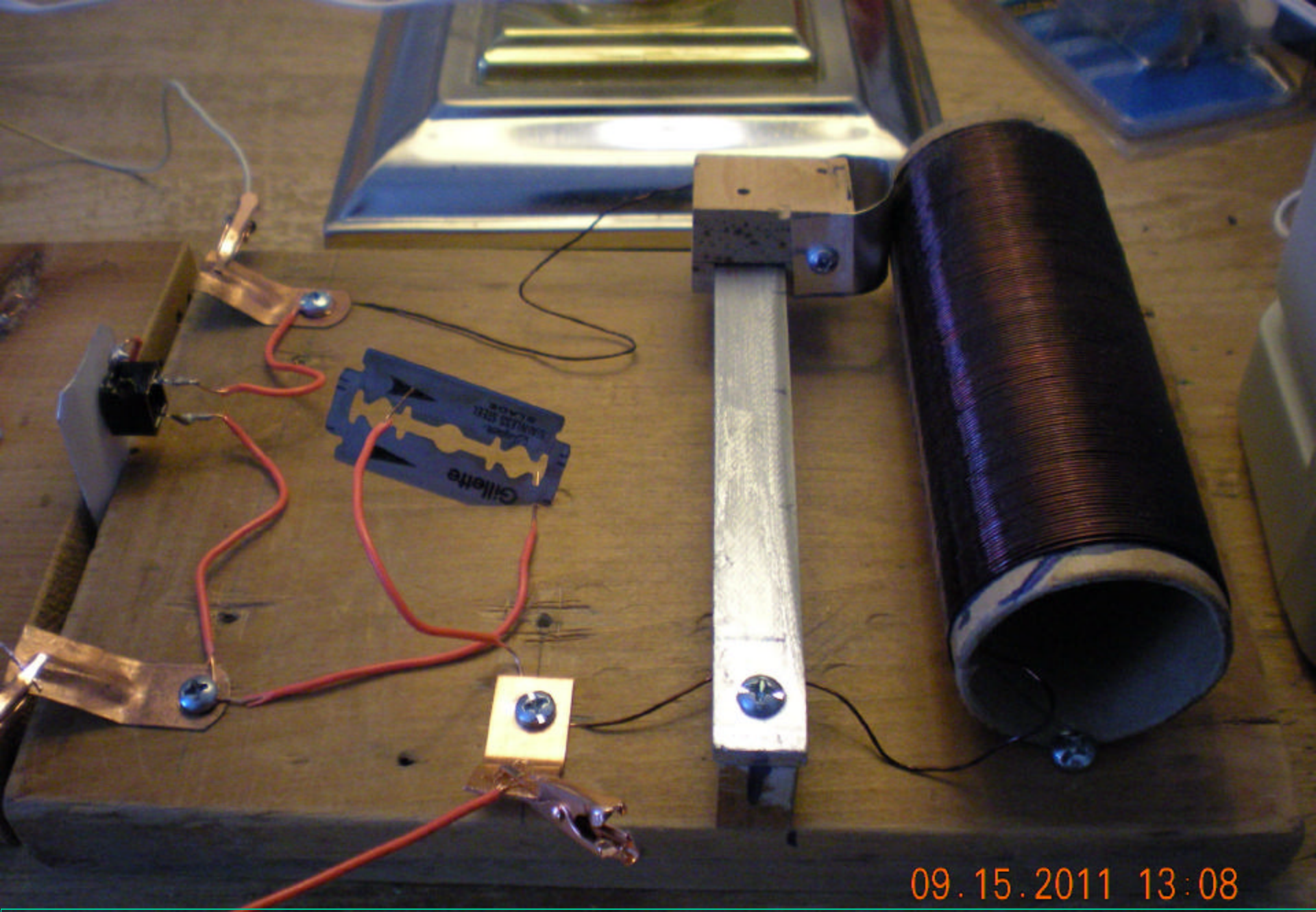



**Build your own simple Gillette stainless razor blade AM radio receiver w/razor signal demodulator**

## Induction coil design parameters
## spans AM broadcast frequency range 760kHz-1500kHz

==========

Gillete blue or stainless razor AM demodulation station carrier frequency kHz function of induction-L uHenry, coil dia inch, Nn turns, length=0.030*Nn given #22 Cu enameled wire OD=0.030 inch
(E:\Mcd6_11\inductance.mcd 15 Sept 2011
given empirical inductance eq L=(dia^2 times N^2)/(18*dia+40*length)

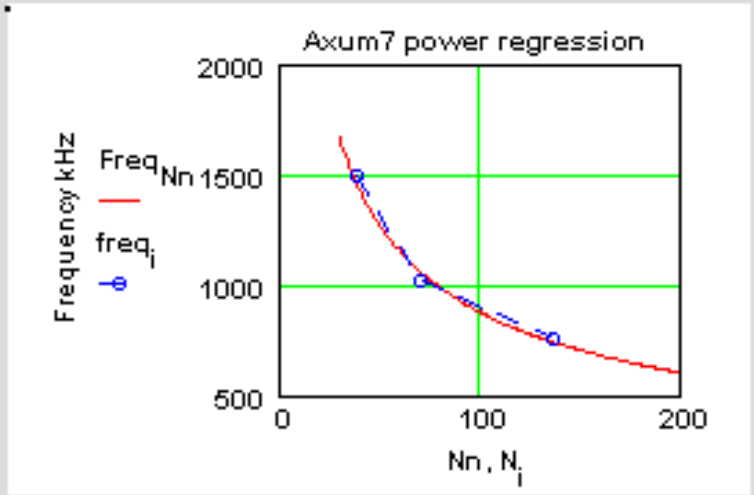
$Nn := 30 .. 200$ Turns

$Length_i := N_i \cdot 0.030$ inch

$$L_{Nn} := \frac{dia^2 \cdot (Nn)^2}{(18 \cdot dia + 40 \cdot Nn \cdot 0.030)}$$

$n := 0.5328$ $C0 := 10268$

$$Freq_{Nn} := \frac{C0}{Nn^n}$$




Observed data

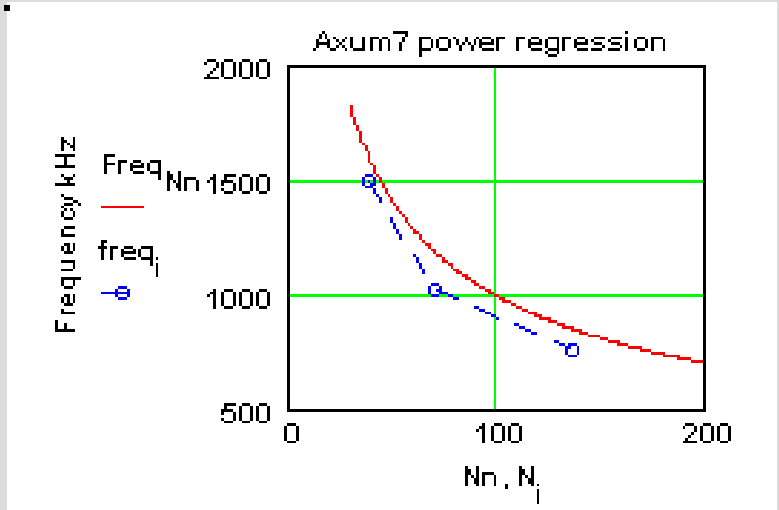
| Turns $N_i$ := | kHz $freq_i$ := |
|---|---|
| 38 | 1500 |
| 71 | 1030 |
| 136 | 760 |

## Following approximate equation likely good enough

Likely optional empirical equation ==========

$n := 0.5000$ $C0 := 10000$

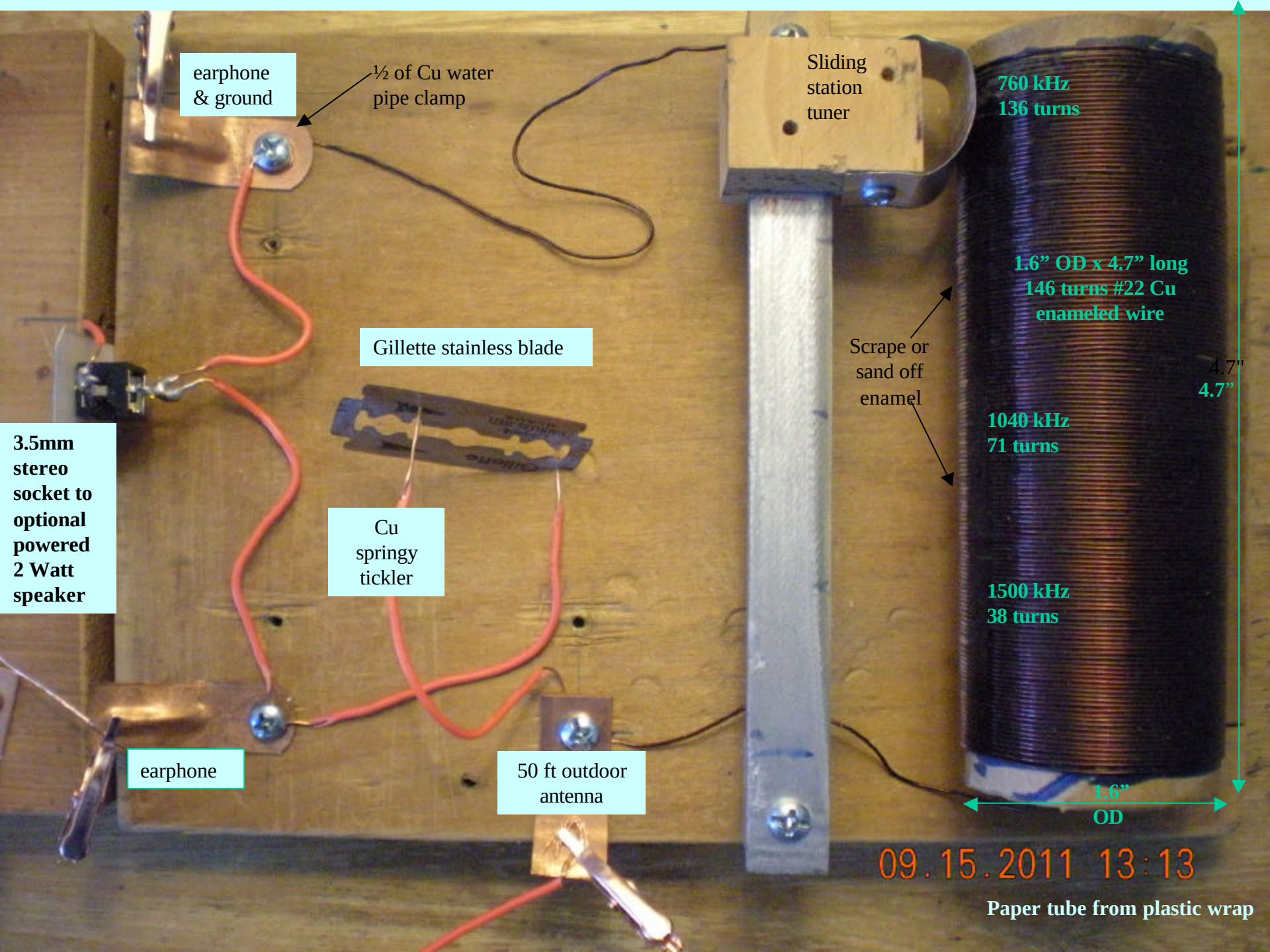
$$Freq_{Nn} := \frac{C0}{Nn^n}$$

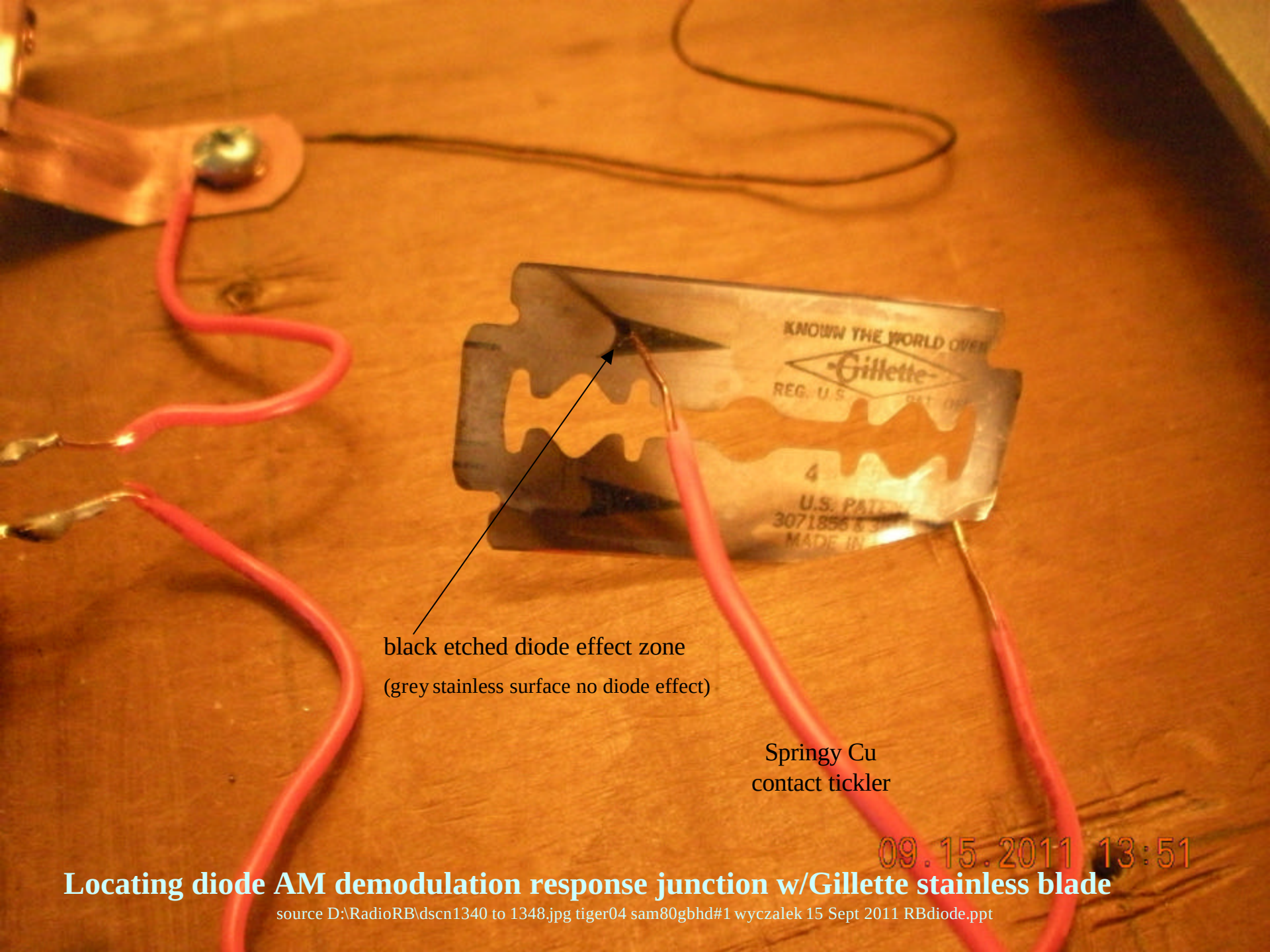



# Axum7 power regression curve - Gillette stainless blade AM diode demodulator

**given observed (blue dash points)AM station frequency kHz vs number of induction coil turns (Nn)**

given #22 Cu enameled wire OD=0.030", paper tube OD=1.6", empirical induction equation L=[(d^2)*(Nn^2)]/(18*d+40*Nn*0.030)
source D:\RadioRB\amsicap0017-0019.gif E:\Mcd5_11\induction.mcd FreqTurnA.xls tiger04 sam80gbhd#1 wyczalek 15 Sept 2011 RBdiode.ppt


earphone & ground
½ of Cu water pipe clamp
Sliding station tuner
760 kHz
136 turns
1.6” OD x 4.7” long
146 turns #22 Cu enameled wire
Scrape or sand off enamel
4.7"
4.7”
Gillette stainless blade
3.5mm stereo socket to optional powered 2 Watt speaker
1040 kHz
71 turns
Cu springy tickler
1500 kHz
38 turns
earphone
50 ft outdoor antenna
1.6” OD
09.15.2011 13:13
Paper tube from plastic wrap




# Locating diode AM demodulation response junction w/Gillette stainless blade

source D:\RadioRB\dscn1340 to 1348.jpg tiger04 sam80gbhd#1 wyczalek 15 Sept 2011 RBdiode.ppt