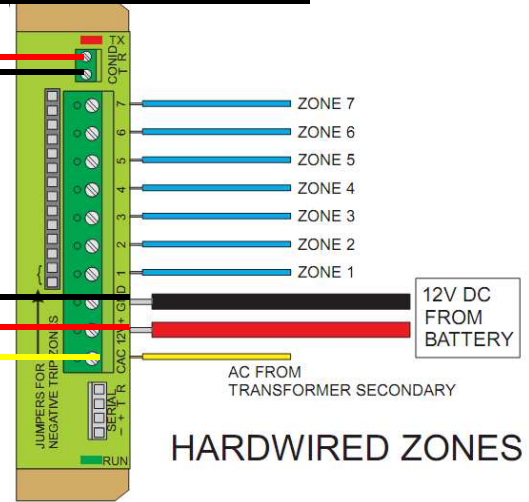


Connection diagram if used with Paradox panels that don't work with serial or are not Paradox panels.

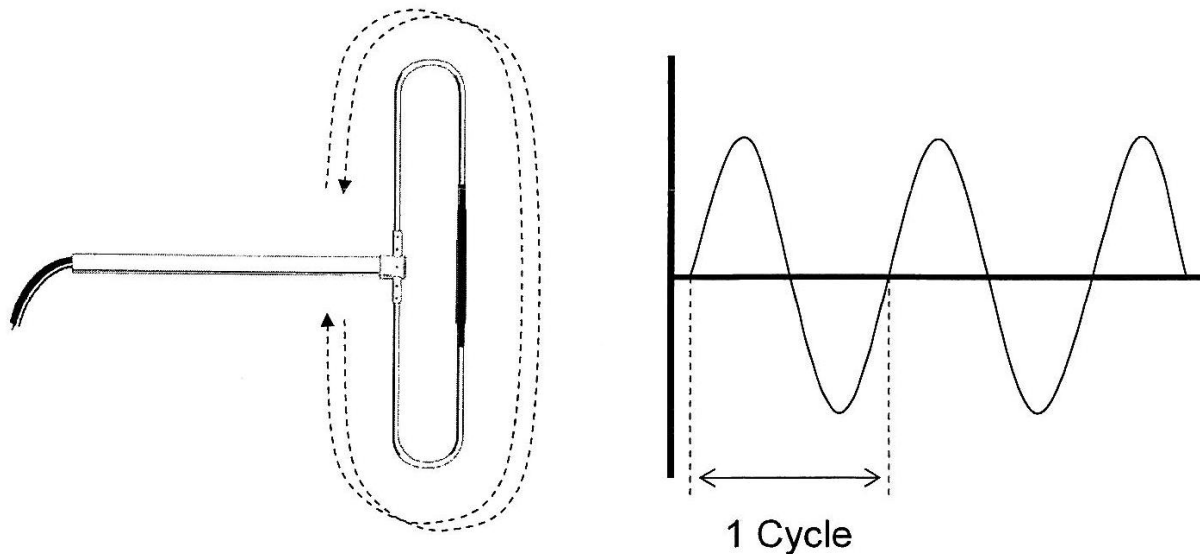
1. Tip on Paradox to T on Radionet
2. Ring on Paradox to R on Radionet



HARDWIRED ZONES

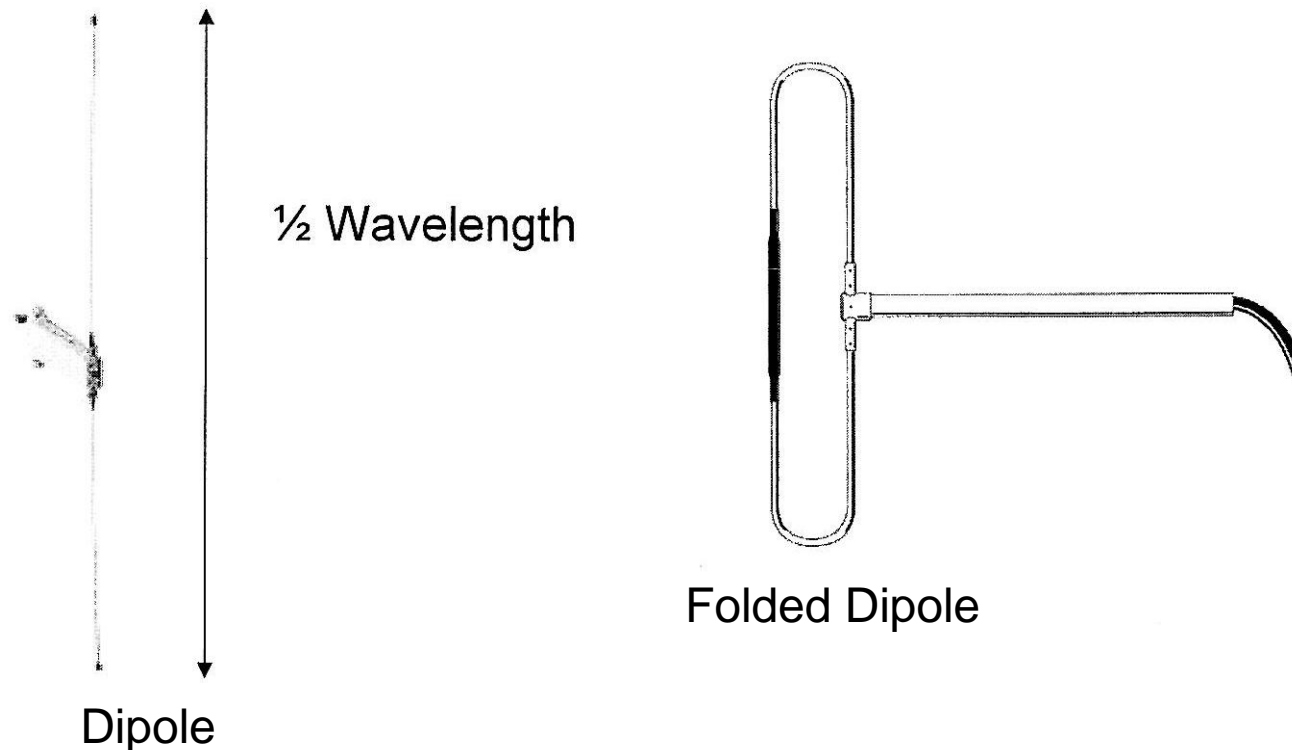
Antenna's

- Most antennas are from two basic types:
 - *Dipole* antenna
 - *Whip* antenna
- This direction is changing about 160 million times a second.



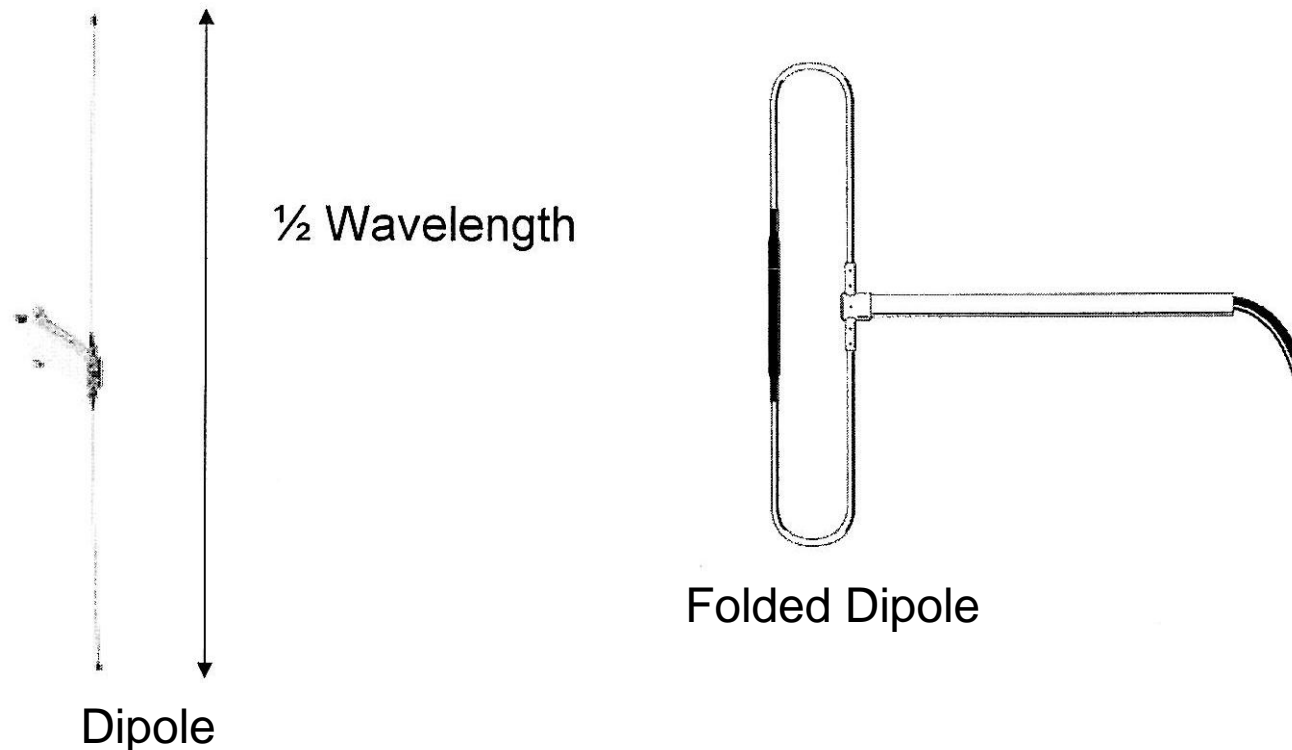
Dipole Antenna's

- The Dipole antenna is $\frac{1}{2}$ wavelength long.
- Folded dipoles have a broader frequency spectrum.
 - Are slightly shorter than normal dipole.



Dipole Antenna's

- The Dipole antenna is $\frac{1}{2}$ wavelength long.
- Folded dipoles have a broader frequency spectrum.
 - Are slightly shorter than normal dipole.



Introduction

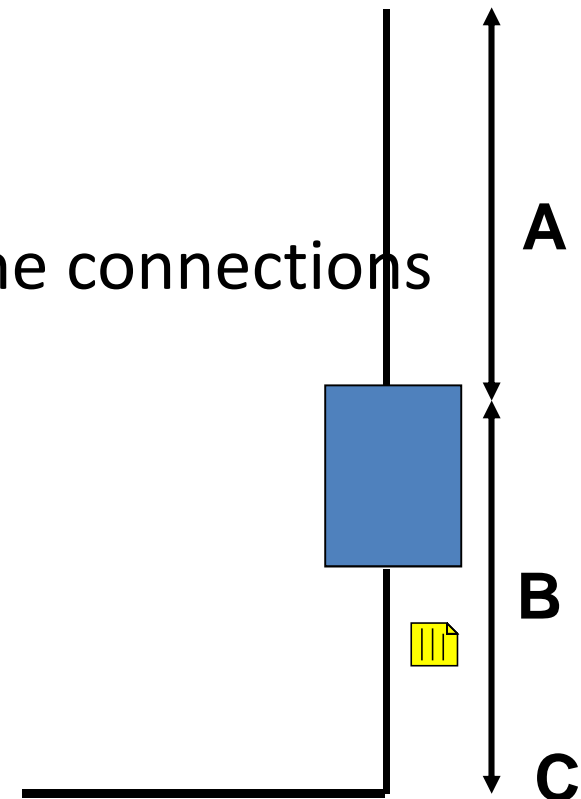
- Nothing should be closer than 1 wave length from any part of the antenna.
- On Radionet frequencies this is about 1.8m.
- The signal one meter from an antenna is four times stronger than the same signal 1.8m away!
- The signal is weakest directly above or below a vertical antenna.
 - If you need to mount the panel nearer than 1.8m from the antenna, this should be done directly below it. 📄

Whip Antenna's


- The basic whip antenna is $\frac{1}{4}$ wavelength long.
 - Example: If the frequency is 160MHZ, this is +/- 47cm.
 - The antenna **can not** be shortened, bent or coiled.
- Must be mounted vertically.
- Needs to be grounded or connected to a network of wires called a COUNTERPOISE.
- The counterpoise provides the equivalent of an additional $\frac{1}{4}$ wavelength, required for the antenna to resonate.

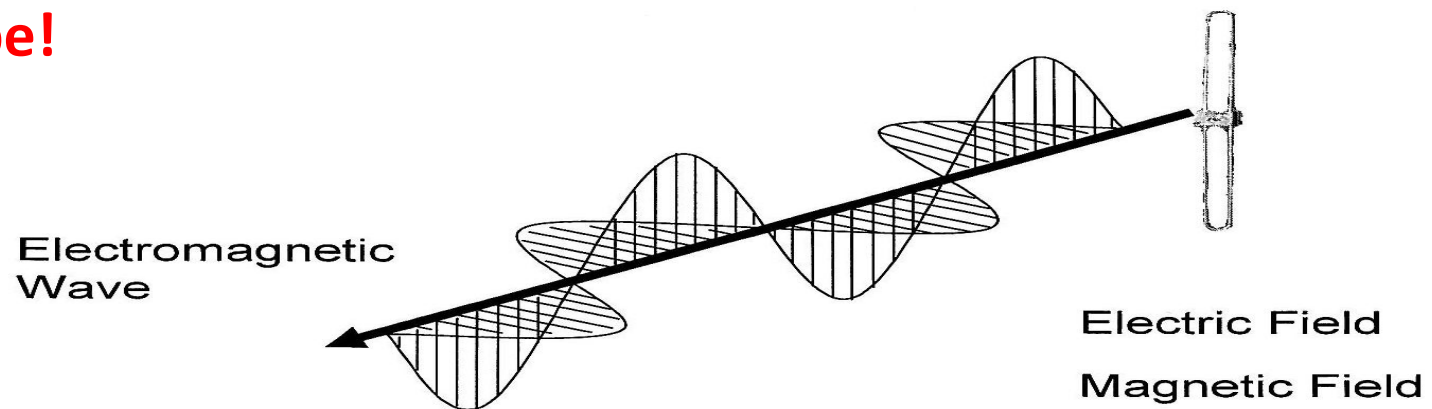
Whip Antenna's

- When installing the radio with a whip:
 - Distance **A** = **whip antenna**
 - Distance **B** = **counterpoise**
 - **A** must be equal to **B** in length
 - A 90 degree bend is needed in the connections wiring at **C**.



Polarisation

- For the best signal both the transmitter antenna and the receiver antenna must both be on the same plane of polarisation.
 - A vertical aerial will create an electromagnetic wave that is vertically polarised.
 - The electric field will be vertical and the magnetic field will be horizontal.
-  **The RX antenna is vertical, so the TX antenna must also be!**



Dipole Antenna's

- If the cable must be folded, Distance **A** must not be less than 5 x diameter of the cable.

