



# JC-3s MICRO

## AUTO ANTENNA COUPLER ❖ NEW EDITION

- 1) 1.8 - 50MHz , 200W SSB FOR ANTENAS 5 M OR LONGER!
- 2) BETTER PERFORMANCE DUE TO SMALLER CAPACITOR STEP ( 9pF )
- 3) DIRECT FUNCTIONING WITH ICOM , ALINCO , KENWOOD
- 4) 50 "EEPROM" MEMORIES – NO BATTERY !!!

**NEVER USE THE COUPLER UNTUNED OR “THROUGH” AND CORRECT THE SWR USING AN INDOOR ANTENNA TUNER NEAR THE TRANSCEIVER !!!**

|                   |                                                              |
|-------------------|--------------------------------------------------------------|
| 1. +12 V (BROWN)  | • +12 VDC POWER SUPPLY (-12 V RETURN VIA COAXIAL SHIELD !!!) |
| 2. START (GREY)   | • TUNE COMMAND FROM TRANSCEIVER OR CONTROL BOX TO COUPLER    |
| 3. KEY (YELLOW)   | • TX COMMAND FROM COUPLER TO TRANSCEIVER OR CONTROL BOX      |
| 4. MEMORY (BLACK) | • MEMORY CONTROL : +12V → NO , 0V → YES                      |

**GROUND      WATCH OUT : -12 V RETURN TO POWER SUPPLY VIA THE COAXIAL SHIELD !!!**

### MANUAL TUNING PROCEDURE

Press the BUTTON on the control box until the led is lit.

Transmit sending a carrier of approximately 10 to 20 Watts to the coupler until the led goes off.

Adjust power to the final level and transmit! ( Up to 200 W pep SSB )

### MEMORY USE

To enable memories we set the switch on the control box to the Y position. All frequencies we tune, up to 50, are recorded. When we go to the same frequencies again and perform the tuning procedure ,the coupler is almost instantly ready to be used. All it has to do is count the incoming signal frequency and use the tuning

combination it has done before! ( If it fails because the antenna system has changed, it repeats the tuning procedure and saves the new combination in the same memory position.)

### ERASING MEMORIES

To erase the memories we set the switch on the control box to the N position and without transmitting we press the button till the led is lit. Then we set the switch to the up position again. The led is blinking and when it finishes the memories have been erased!

### SPECIFICATIONS

|                                           |                                |
|-------------------------------------------|--------------------------------|
| Circuit type                              | reversible L or $\Pi$          |
| Input capacitance step (coaxial side)     | 16pF                           |
| Output capacitance step (antenna side)    | 9pF                            |
| Inductance step                           | 80nH                           |
| Total capacitance                         | 1800pF                         |
| Total inductance                          | 20 $\mu$ H                     |
| RELAYS used                               | Omron G2R-1 and Siemens V23127 |
| Operating frequencies                     | 3 to 50 MHz                    |
| Maximum power for antennas > 15 $\mu$ .   | 200W SSB ( 50W AM )            |
| Minimum antenna length for 200 W SSB      | 10 $\mu$ . → 3 to 50 MHz       |
| Minimum antenna length for 50 W AM        | 10 $\mu$ . → 6 to 50 MHz)      |
| Recommended tuning power                  | 10 – 20 W (carrier)            |
| Typical tuning time                       | 1 – 3 sec.                     |
| Maximum tuning time                       | 6 sec.                         |
| Supply voltage limits                     | 12.5 – 16 V                    |
| Maximum supply current                    | 0.7 A                          |
| Typical VSWR (tuner input )               | < 1.1 : 1                      |
| Maximum VSWR (tuner input)                | < 1.9 : 1                      |
| Protection ( NOT FOR LIGHTNING STRIKE ! ) | Static discharge               |
| Dimentions ( without mounting bracket )   | 19 x 10.5 x 9.5 cm             |

### COUPLER CONTROL BOX

|                                                                    |        |        |                                                                                                |
|--------------------------------------------------------------------|--------|--------|------------------------------------------------------------------------------------------------|
| Connection with<br>Power supply:<br><br>RED = +12 V<br>BLACK= -12V | BROWN  | +12V   | <u>-12 V returns to supply via coaxial shield !</u>                                            |
|                                                                    | GREY   | START  | Led remains lit for 10 sec when start button is pushed . (Send carrier to perform tuning.....) |
|                                                                    | YELLOW | KEY    | (.....coupler is tuned when LED is off )                                                       |
|                                                                    | BLACK  | MEMORY | ENABLE/DISABLE (CTRL BOX : Y -> EN / N-> DIS)                                                  |

## TRANSCEIVER – COUPLER COMMUNICATION CABLE

|          |          |          |         |
|----------|----------|----------|---------|
| DISTANCE | 2-20 m.  | DIAMETER | 0.50 mm |
|          | 20-35 m. |          | 0.75 mm |
|          | 35-50 m. |          | 1.00 mm |

## DIRECT CONNECTION BETWEEN COUPLER AND TRANSCEIVER

| YAESU                                                                                                   | ALINCO                                                                            | ICOM                                                                               | KENWOOD                                                                             |                                                                                            |                                                                                            |
|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| YAESU DOES NOT HAVE<br>START - KEY LOGIC.<br>OPERATION IS ONLY<br>POSSIBLE USING THE<br>CONTROL BOX !!! |  |  |  |         |         |
|                                                                                                         | SRT<br>KEY<br>+12V<br>GND                                                         | GND<br>+12V<br>SRT<br>KEY                                                          |                                                                                     | KEY<br> | GND<br> |
|                                                                                                         |                                                                                   |                                                                                    |                                                                                     | SRT                                                                                        | +12V                                                                                       |

\*We connect +12V , START and KEY terminals with the proper connector behind the transceiver.  
(-12 V does not need to be connected to the coupler since it returns to the power supply via coaxial shield.)  
Transceiver's MENU must be programmed for external coupler operation, if needed.

ATTENTION: If you use the control box with a separately power supply than the power supply of your radio then you **MUST** connect the “-“ of the 12v tuner power supply to the GROUND connection of the radio. You can do this with a separate single earth wire.

Always avoid ½ wave length wires. Better is to make it just a little longer. So better 12 meter than 10 meter long wire.

## USE RUBBER TAPE TO ISOLATE YOUR CONNECTORS FROM WATER AND RAIN

(Like vulcanized Telco tape and so on)

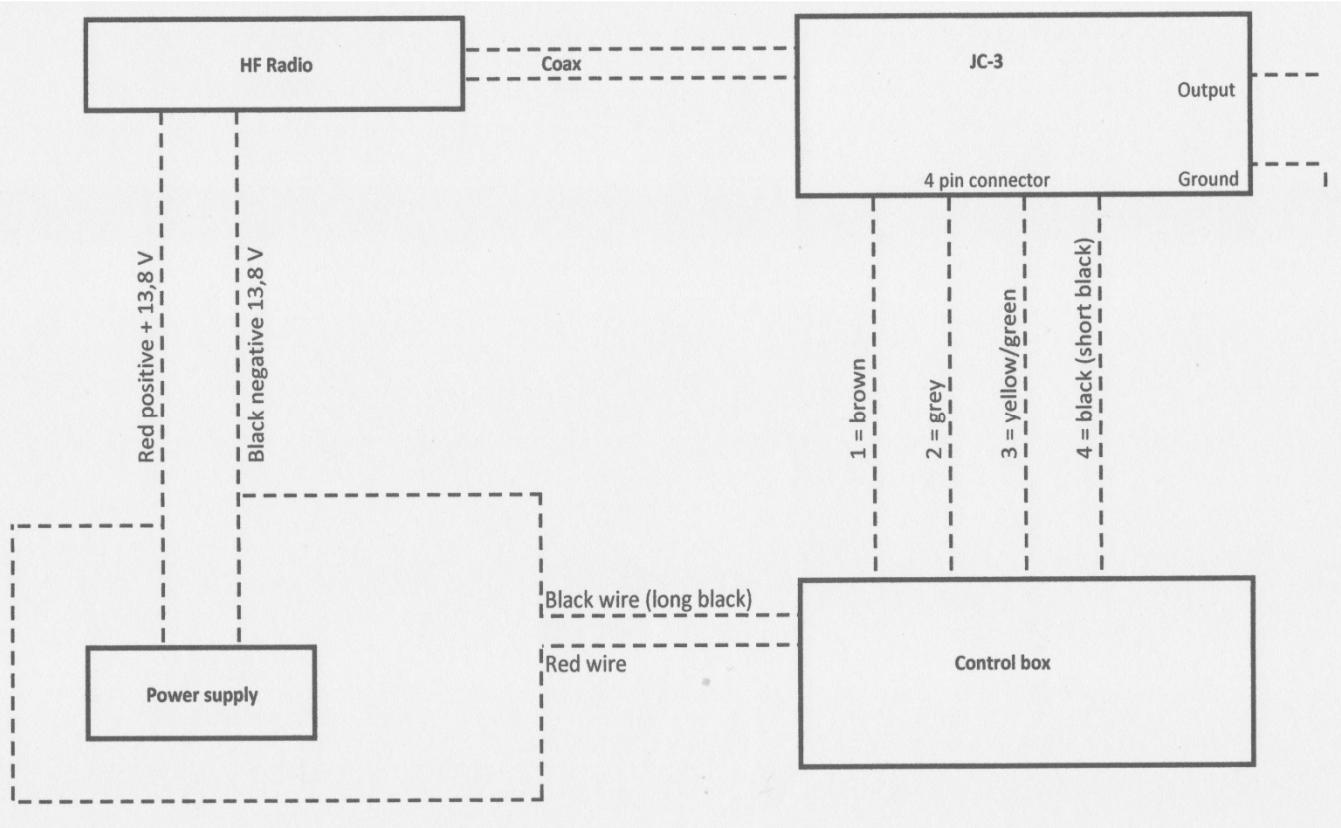
The earth connection and wires are very important. Just some radials on the ground is not good enough! The counterpoise must be as close to the tuner outside as possible for the best performance.

**Do not open the JC-3 tuner box for maintenance. It has no parts for service inside or any adjustment or switches.**

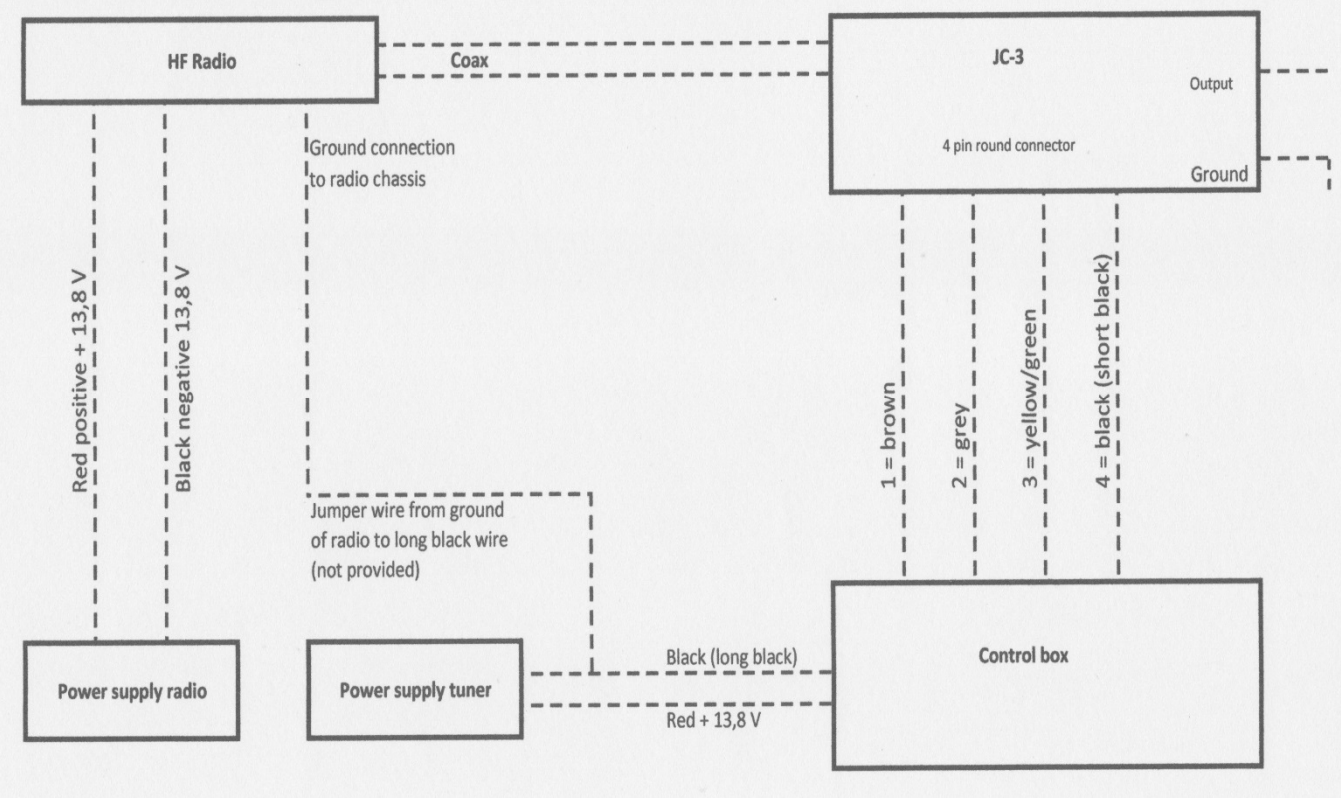
**The box is sealed which you have to seal again if you open the tuner anyway.**

We recommend to make precautions that full rain does not come direct on the tuner box

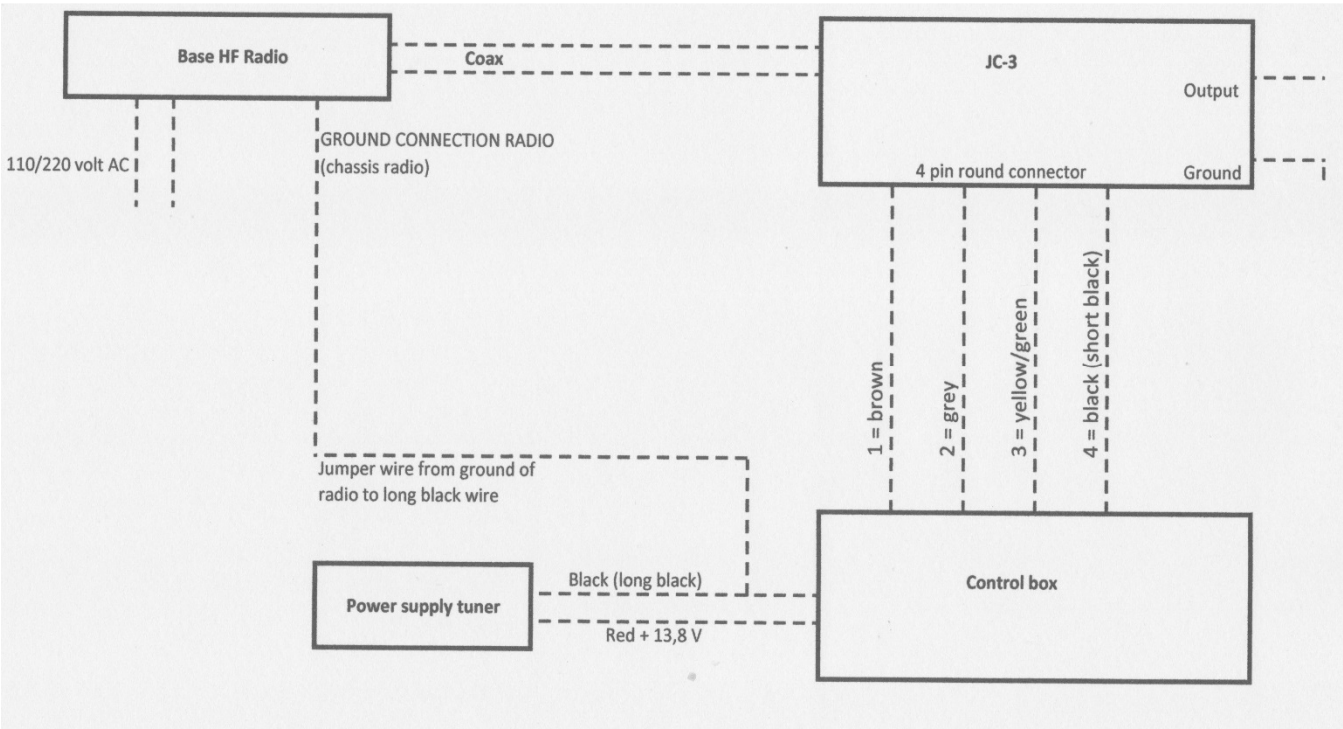
Mobile HF radio connected with tuner and 1 power supply



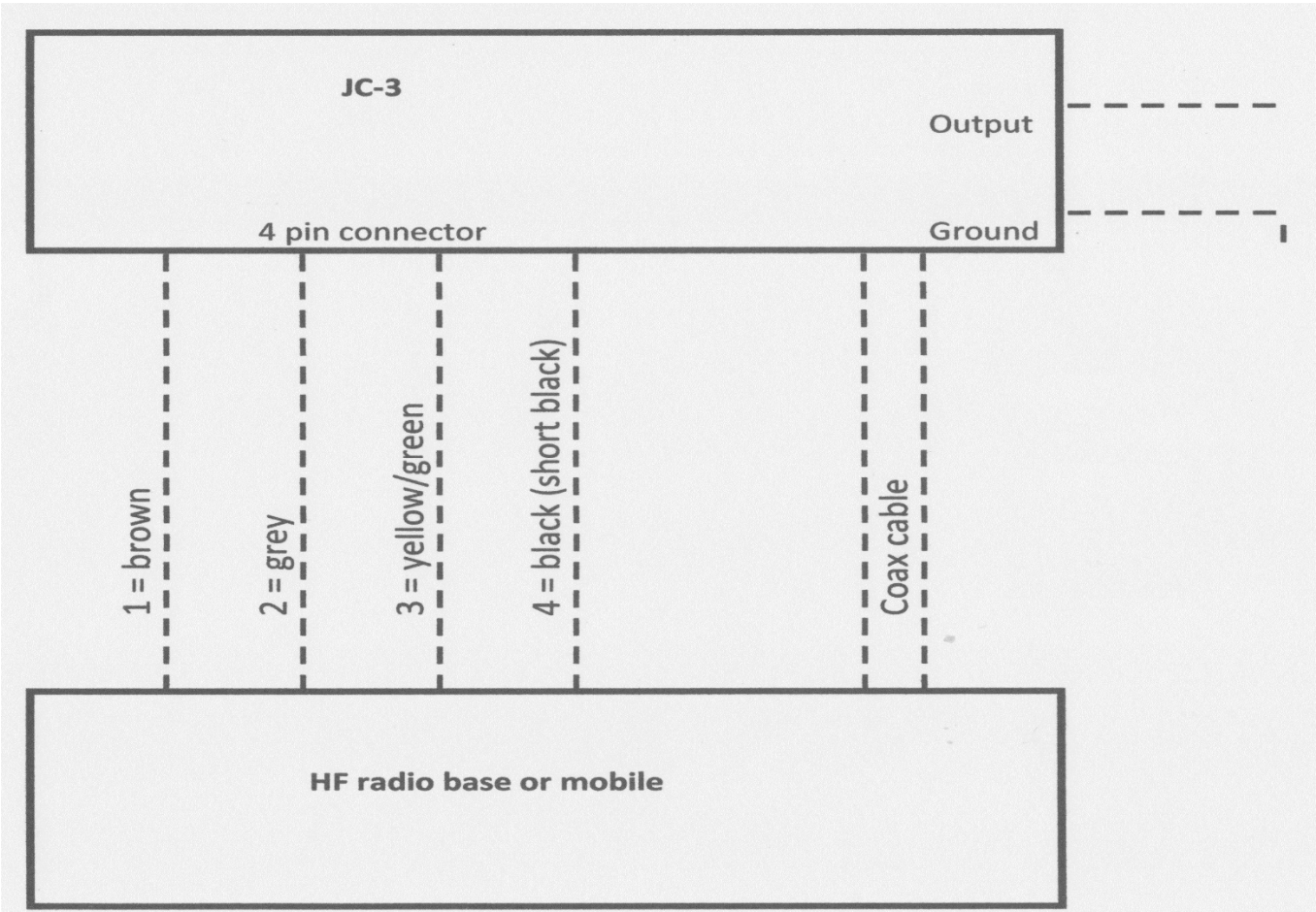
Mobile HF radio & tuner connected with 2 separately power supplies



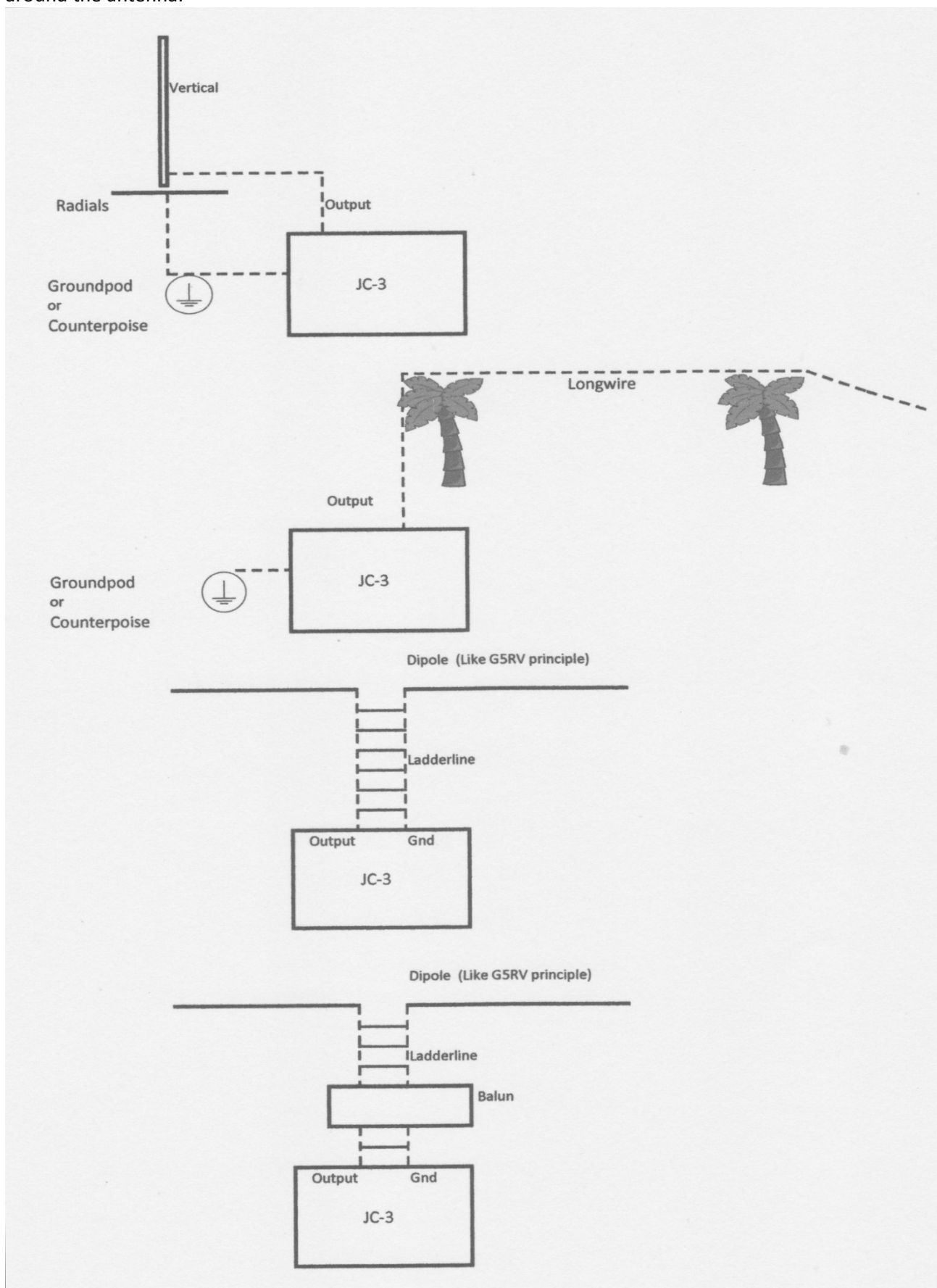
HF Base radio connected with tuner and separately power supply

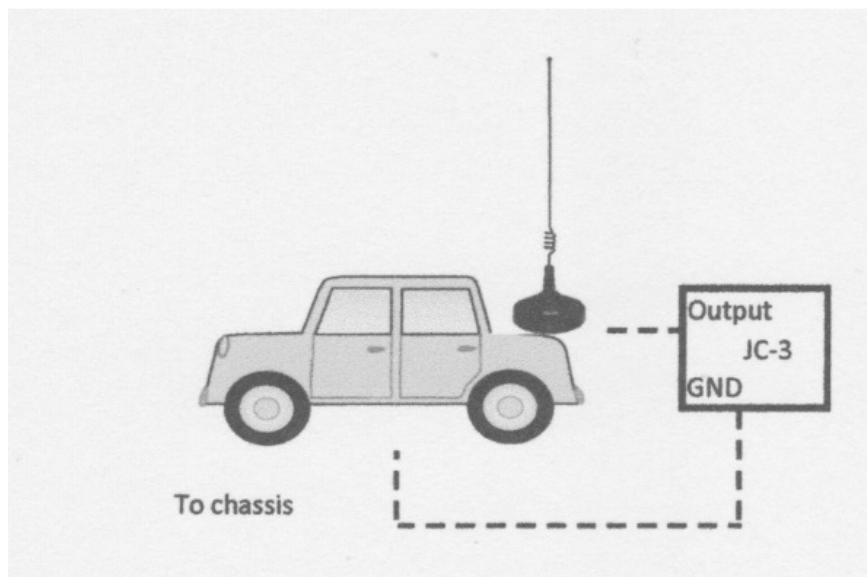
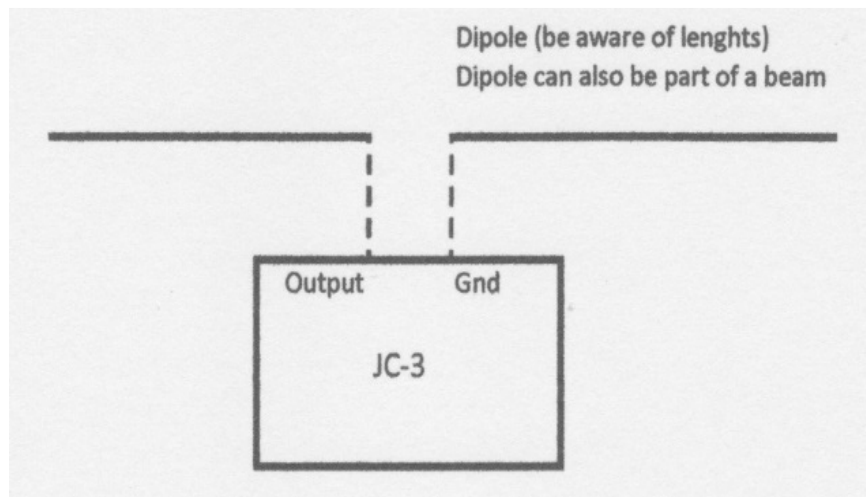
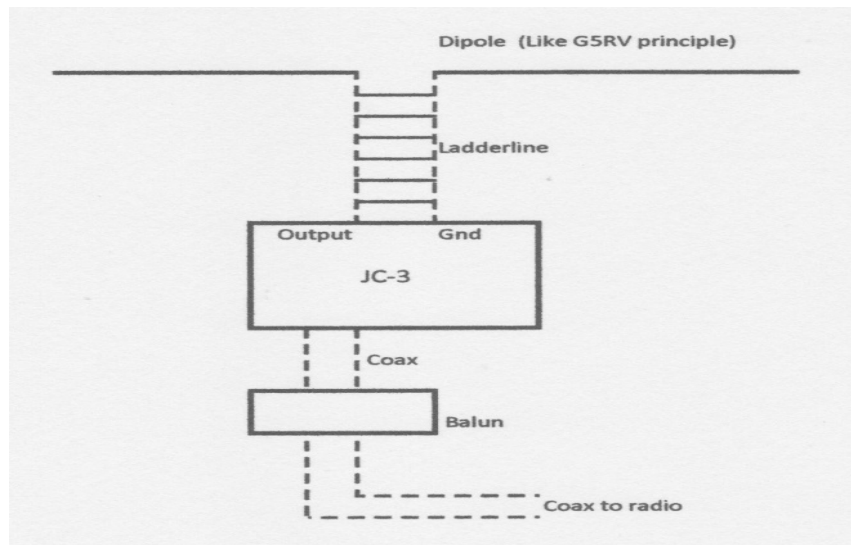


Tuner connected directly to a radio. READ manual (so control box not needed in this setup)



Some antenna examples. There is no “best” solution. It all depends on your interest, length of wires and space around the antenna.





[www.stockcorner.nl](http://www.stockcorner.nl)  
email: [info@stockcorner.nl](mailto:info@stockcorner.nl)