

## HOW TO GUIDE: Installing External Radios

This document describes the installation of external radios for use with both the mojoRTK console and the mojoRTK base. Its intended audience is a Leica-approved Value Added Reseller.

### Description

In their default configuration, the mojoRTK console and base use internal 900MHz 1W radios for base to console communications. However, external radios from third parties can be used for this link if desired.

### Benefits

Possible reasons for using external radios include:

- The customer requires a higher power transmission to provide a longer range
- A different frequency is needed for specific country requirements.

### Limitations

The console and base station must be configured with compatible radios and must be programmed to the same frequency or channel.

You can not operate a console with NMEA out and a external radio without a modified cable.

### Required Items

- An external radio (from a third party vendor) for each console and each base station
- An NMEA Cable (part number 675559) for each console
- A Base External Radio Serial Cable (part number 675563) for each base station

## Configuration

### mojoRTK Console Connection

The NMEA cable is used to connect the mojoRTK console to the external radio.

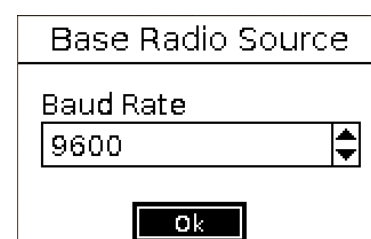
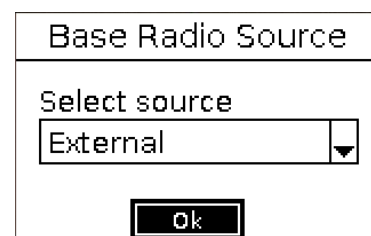
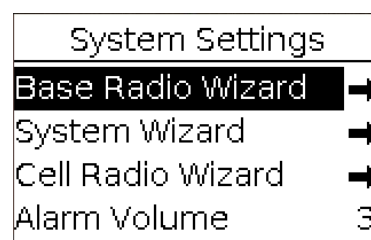
- Connect the coloured ISO C connectors to the mojoRTK console
- Connect the black serial (DB9) cable to the external radio
- The red and black rear audio connectors are not related to external radio operation



**Note:** Power for the external radio is not provided from the mojoRTK console and should be connected as per the radio supplier's recommendation.

### Configuring the mojoRTK Console

1. From the navigation screen press the OK button to enter the Menu. Navigate to the Base Radio Wizard as follows:  
Settings - > System - > Base Radio Wizard
2. After pressing OK to select the Base Radio Wizard, a warning message will appear. Press OK on this message.
3. The next screen will prompt you to select the source of the radio. From the list, find and select External and press OK.
4. The next two screens will ask for the Baud Rate and Parity of the external radio. Please refer to the external radio's instruction manual to determine the appropriate values.
5. Select appropriate Baud Rate. Press OK.
6. Select appropriate Parity. Press OK.
7. When prompted, press OK to restart device.
8. Once the mojoRTK console restarts, the external radio should be ready for use.



## mojoRTK Base Station Connection

The Base External Radio Serial Cable connects to the back of the mojoRTK base station.

- Connect the DB15 (VGA) connector to the back of the base
- Connect the DB9 serial connector to the external radio

**Note:** Power for the external radio is not provided from the mojoRTK base and should be connected as per the radio supplier's recommendations.

## Configuring the mojoRTK base

1. From the main screen, press the Up button once to enter the Main Menu.

2. Scroll using the Up and Down buttons until Channel is selected and press OK.

```
< Main Menu
Channel >
```

3. Scroll using the Up or Down buttons until Ext Radio 1 is found. Press OK to select this channel.

```
< Channel
Ext Radio 1 >
```

4. The next two screens will ask for the Baud Rate and Parity of the external radio. Please refer to the external radio's instruction manual to determine the appropriate values.

5. Select the appropriate Baud Rate and press OK.

```
< Baud Rate
9600 >
```

6. Select the appropriate Parity and press OK.

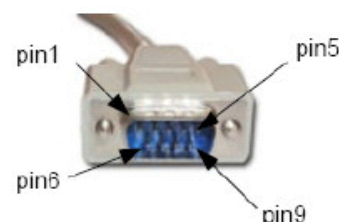
```
< Parity
None >
```

7. After a few seconds, the LCD will display a message saying Channel changed. The base should now be using the external radio.

## NMEA cable signal information

The NMEA cable provides the RS232 Serial Interface to an external radio. This cable contains the following RS232 signals: TX, RX, CTS, RTS, GND. Currently flow control is disabled and the serial port is using only TX,RX,GND.

Front View of DB 9 Male



Pin 1 – Not Connected  
 Pin 2 – RX  
 Pin 3 – TX  
 Pin 4 – Not Connected  
 Pin 5 – GND  
 Pin 6 – Not Connected  
 Pin 7 – RTS  
 Pin 8 – CTS  
 Pin 9 – Not Connected

