

### Turn on the receiver

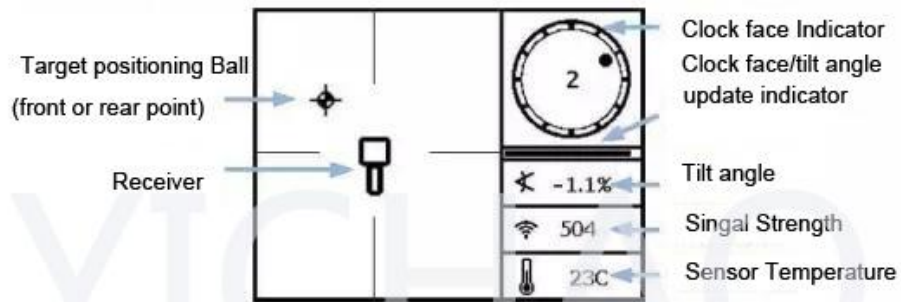
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1. Insert the battery and click the trigger to open the receiver
2. Make sure that the area number in the Earth icon on the startup screen matches the number on the sensor
3. Click on the trigger to enter the positioning screen

Infrared Port



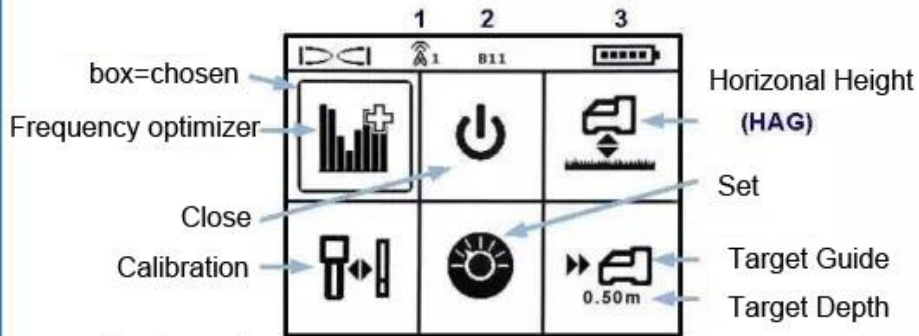
### The receiver positioning screen



The sensor and the receiver must be matched before the data is displayed

### The main menu on the receiver

Click the trigger to enter the main menu, continue to click the trigger, you can switch between the menu options, briefly hold down the trigger and release to select menu



1. Remote sensing communication channel
2. Frequency band
3. Receiver battery volume

DigiTrak For remote display operation, see separate manual or quick start guide

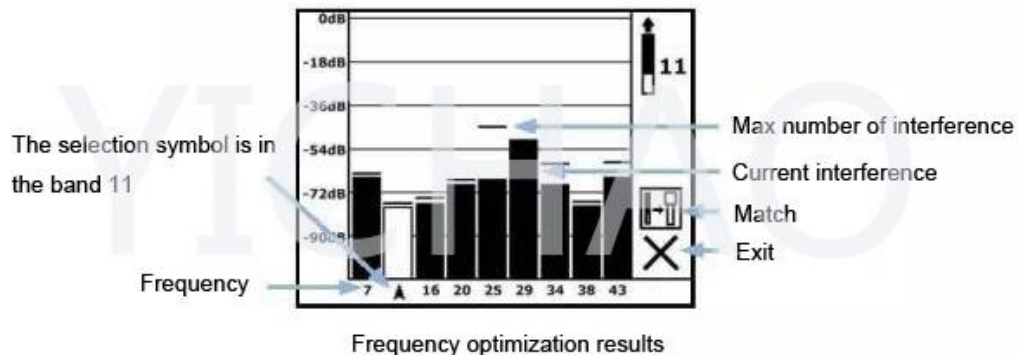
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## Preparation steps before drilling

1. Optimization and measurement of active interference
2. Select the 11 band
3. Match the receiver with the sensor.
4. Check background interference.
5. Calibrate
6. Check the system range on the ground

## Optimization and measurement of active interference

1. Keep the sensor off, select the frequency optimizer (FO) in the main menu. The frequency optimizer will display 11 band active interference (noise) readings (other frequencies are not available in the Falcon F1 system).



2. Depending on the results displayed by the frequency optimizer, walk along the aperture and observe the noise readings, while marking out those locations where there are abnormal changes. If the noise level rises drastically at some point in the drilling path, you should consider reoptimizing at those locations with high interference.

## Choose frequency band 11

3. By clicking on the trigger, move the selector to the band 11, briefly hold the trigger to select it, and the system assigns the up band.



Each new project will need to rerun the frequency optimization menu, which will select a different operating frequency for the 11 band based on the site site noise



Your receiver can only detect active interference, and can not detect passive interference. Falcon F1 used the 11 band, because the frequency band in the anti-jamming performance is better, even passive interference

## Receiver matching with sensor



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4. Select the matching menu (this menu blinks) and briefly press the trigger to enter the matching screen.
5. Insert the battery into the sensor and close the rear cover to activate the sensor.
6. Align the infrared port of the sensor with the infrared port of the receiver and ensure that the distance between the two is within 5 cm.



7.  Select the icon to complete the matching

### Check background noise

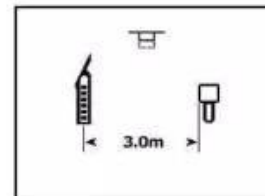
8. Return to the location screen. Have a colleague hold the sensor on your side, at a distance approximately equal to the maximum depth of the hole. Both walk in parallel and the receiver remains above the drilling path, taking note of the locations where the display data or signal strength is erratic or the data signal is lost. When this occurs, reoptimization in the region should be considered (See step 1)

### Calibration



After each optimization, you must calibrate in a less disturbing environment

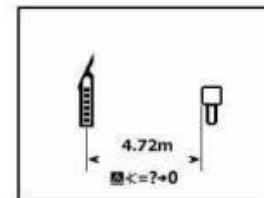
9. Place the loaded drill bit parallel to the receiver 3 meters away, as shown.
10. From the main menu, select Single Point Calibration (1PT CAL) and click Trigger Calibration



This icon will be displayed on the clock indicator (positioning screen) if the band is not calibrated.

### Check Ground Range Distance (AGR)

11. Each time a tape measure was used to verify the ground-level readings of the ground 11 band at the maximum depth of planned work. This depth reading should be within 5% of the error range



To enter the AGR screen later, click Single Point Calibration (1PT CAL), but do not click the trigger to start the calibration; the AGR screen will appear after 15 seconds.

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### Setting Menu

Set the depth unit, tilt unit, angle offset, remote sensing channel via the setup menu. Set the remote display to match the receiver's depth and tilt settings.

### Floor Height Menu (HAG)

HAG is the distance from the bottom of the receiver to the ground when the operator holds the receiver. Set the HAG menu in the main menu so that you can get accurate depth values without placing the receiver on the ground.

### Max Mode

The Max mode helps to obtain accurate and stable depth / tilt readings at high disturbance readings.

- Both the drill bit and the receiver must remain stationary while reading the Max mode reading.
- Press and hold the trigger for at least 5 seconds to enter Max mode. The data will not be recognized until data is stable in Max mode
- Always fetch Max mode data three times; and all data should be maintained. For additional important information on this feature, please refer to the system user manual

### Signal attenuation

When the sensor depth is less than 3 meters, an A symbol may appear on the clock face indicator and on the frequency optimization results. This is normal. If the A symbol and the signal strength are flashing, this indicates that there is currently an extreme interference, see the user manual.



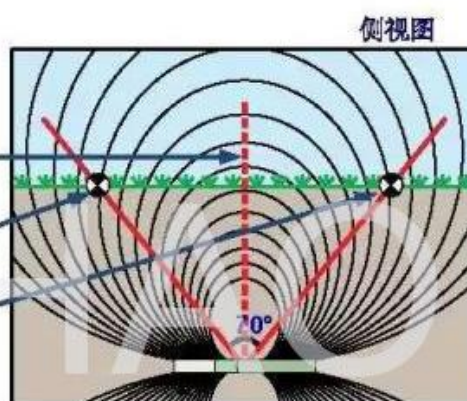
## Basic positioning operation

1. Locate the front and rear locating points (FLPs and RLPs) by placing the ball in the box
2. In front of the set point (FLP), hold down the trigger to obtain the previous point prediction depth.
3. Locate the locating line (LL) by placing the line in the center of the box between the front and rear locating points (FLPs), see the previous page
4. On the location line (LL) between the front and rear positioning points, you can check the depth by pressing the trigger
5. Press and hold the trigger for more than 5 seconds to activate the Max mode (see page 4)

## Sensor signal field geometry

### » Sensor level

LL: location line  
 RLP: rear locating point  
 FLP: front locating point

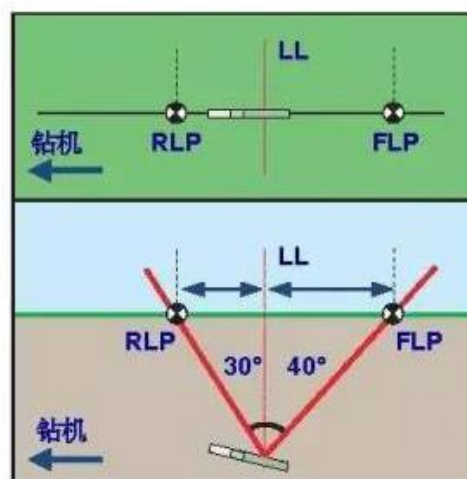


### » Sensor Tilt

Top View

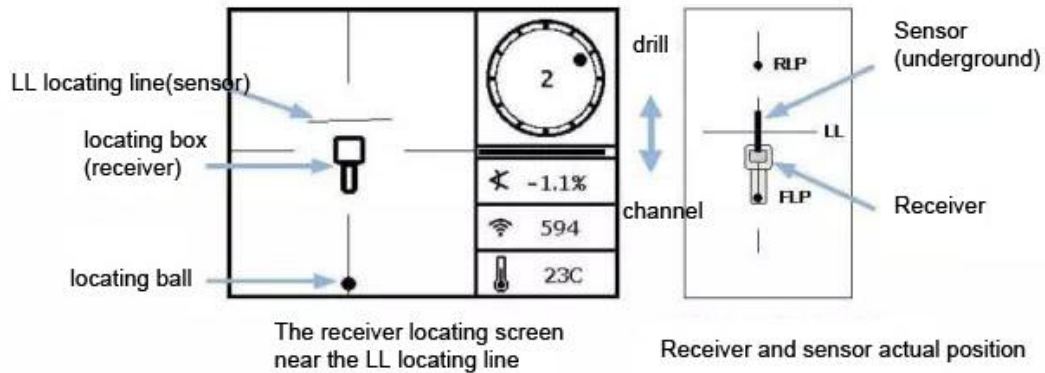
When the sensor is tilted, the distance between the two locating points to the locating line LL is not the same.

Side View

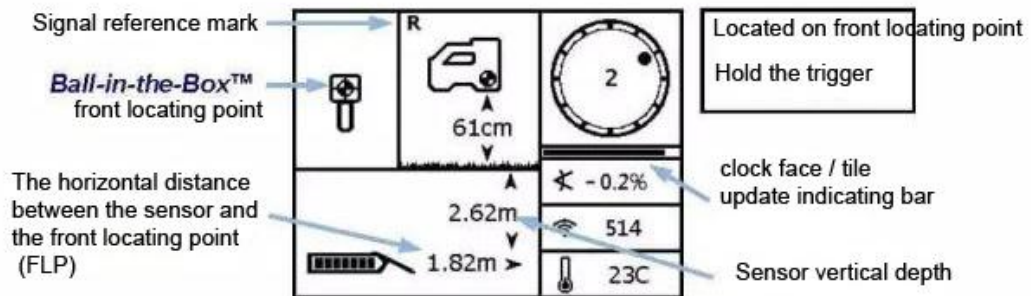
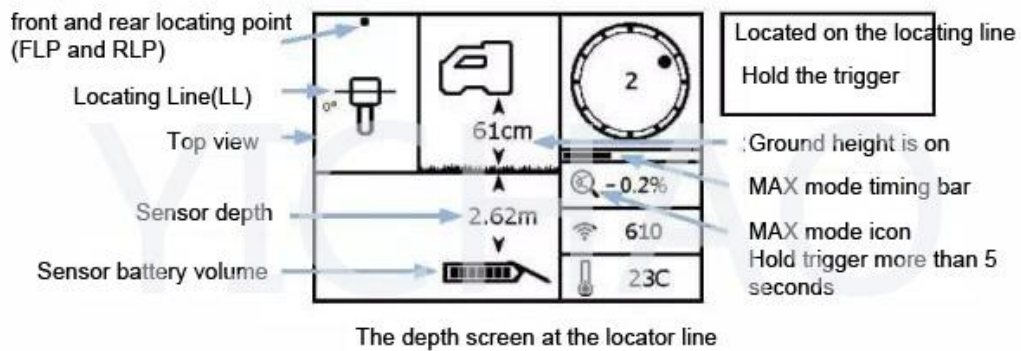


## Locating screen top view

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## Sensor depth and predicted depth



Located on the **Ball-in-the-Box™** front locating point, predicting depth screen