

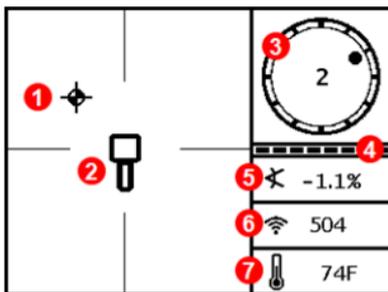
## Power On Receiver

1. Install battery and click trigger to power on the receiver.
2. Ensure the region number in the globe icons on the startup screen and transmitter match.
3. Click the trigger to reach the Locate screen.



1. IR port 2. Trigger

## Receiver Locate Screen

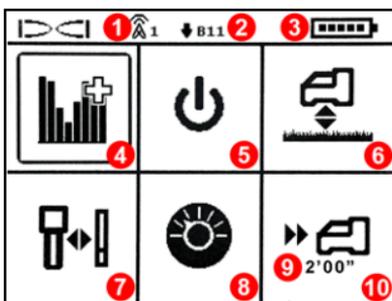


1. Locate point (ball)
2. Receiver
3. Roll indicator
4. Roll/pitch update meter
5. Transmitter (Tx) pitch
6. Tx signal strength
7. Tx temperature

Transmitter and receiver must be Paired before data will display (page 3).

## Receiver Main Menu

Click to open the Main menu. Click between menu options, hold briefly and release to select.



1. Telemetry channel
2. Frequency band
3. Battery strength
4. Frequency Optimizer
5. Power off
6. HAG
7. Calibration
8. Settings
9. Target depth
10. Target Steering

For DigiTrak remote displays, see separate manual or Quick Start Guide.

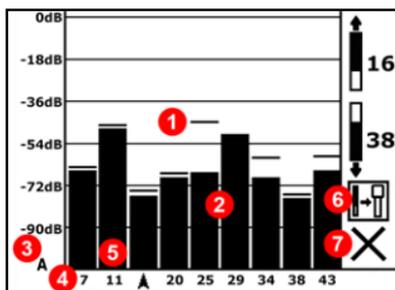
## Steps Required Before Drilling

1. Optimize and measure active interference.
2. Select frequency bands.
3. Pair the receiver with the transmitter.
4. Check for background noise.
5. Calibrate both bands.
6. Check Above Ground Range.

## Optimize and Measure Active Interference



1. With the transmitter off, select **Frequency Optimizer (FO)** from the Main menu. The FO will show active interference (noise) readings for nine frequency bands.



Frequency Optimization Results

1. Maximum noise reading
2. Noise
3. Attenuation in effect
4. Band number
5. Selector
6. Pair
7. Exit

2. With the FO results displayed, walk the receiver along the bore path while observing the noise readings and mark those points where significant changes occur.

**X** If noise levels rise substantially at any point along the bore, consider selecting and pairing one band (see next step) that performed well up to this point. Then select **Exit** and restart FO at this point to perform a new scan and select and pair a second band for use in this higher-interference area.



Your receiver can only detect active interference, not passive interference. Lower frequency bands tend to perform well despite passive interference. Middle bands can perform better in deeper bores and may have longer Target Steering capability. High bands have slightly less signal strength but tend to offer better performance around active interference such as power lines.

## Select Frequency Bands

- Click to move the selector to the band of your choice, hold briefly to select, then assign as either the Up or Down band (the band the Tx powers on with when facing Up or Down). Optionally, set the second band as the opposite.



Up, Down, Cancel



If the band number you want to use is already displayed at the right edge of the screen, select it anyway. The band you select now will be optimized with different frequencies than the last time that band was used.

## Pair the Receiver with the Transmitter (Tx)

- Install transmitter batteries and endcap; the increase in FO noise readings shows the Tx is on.
- Select **Pair** (flashing).
- Position the transmitter's infrared (IR) port within two inches of the receiver's IR port.

If you assigned two new bands, both will pair at the same time, and the receiver will be set to use the Down band first.



1. IR port

- Select the check mark to complete pairing.

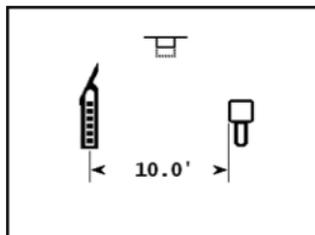
## Check for Background Noise

- Exit to the Locate screen. Have a coworker hold the transmitter beside you at the approximate distance of the maximum intended depth of the bore. Walk the bore together in parallel, with the receiver over the bore. Wherever the data or signal strength becomes unstable or disappears, consider re-optimizing a band in that area (see step 1).

## Calibrate Both Bands

Calibration in an interference-free environment is required after each optimization.

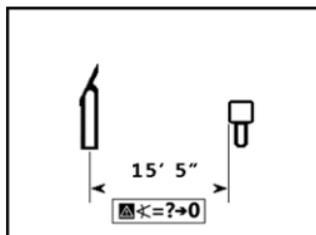
- Place the Tx in a housing on level ground 10 ft. from receiver as shown.
- From the Main menu, select **Calibration**, **1PT CAL**, and click to calibrate.



## Check Above Ground Range (AGR)

11. Always check AGR with a tape measure to verify depth readings for both bands at various distances up to the maximum expected bore depth. Distance readings should be within  $\pm 5\%$ .

To access the AGR screen later, select **Calibration**, **1PT CAL**, and wait 15 seconds for the AGR screen.



If you selected two bands, repeat steps 9-11 (calibration and AGR) for the second band. An error symbol will display in the roll indicator on the Locate screen until a 1-point calibration is completed for the current band.



## Settings Menu



Use the **Settings** menu to set the depth units, pitch units, roll offset, telemetry channel, and select between the transmitter's optimized frequency bands. Set the remote display to match receiver depth and pitch settings.

## Height-Above-Ground (HAG) Menu



HAG is the distance from the ground to the base of the receiver while it is held. Setting HAG on the Main menu lets you take accurate below-ground depth measurements without having to place the receiver on the ground.

## Changing Transmitter Frequency Band

Switch between frequency bands during pre-bore calibration or mid-bore to overcome interference.



A frequency band remains selected on both the receiver and transmitter even after a power cycle.

### Above Ground – Power-On Method

Insert transmitter (Tx) batteries with the Tx pointing down (battery compartment on top, shown at right) to power on in the Down band. Insert batteries with the Tx pointing up to power on in the Up band.



### Above Ground – Tilt Method



Let Tx sit powered on at level ( $0 \pm 10^\circ$ ) for at least five seconds (sec.), tilt Tx up at approx.  $+65^\circ$  (almost vertical) for 10–18 sec., then return to level for 10–18 sec., maintaining  $\pm 2$  clock position (CP) during this sequence. When the Tx changes bands, data disappears from the receiver.

### Below Ground (Mid-Bore) – IO/2/7 Roll Method

Disable Roll Offset (if enabled). Roll the Tx clockwise (CW) to a CP of  $10 \pm 1$  and wait 10–18 sec., slowly roll CW to CP  $2 \pm 1$  and wait 10–18 sec., and slowly roll CW to CP  $7 \pm 1$ . The Tx changes bands within 20 sec. and data disappears from the receiver. Re-enable Roll Offset if applicable.

### Below Ground (Mid-Bore) – RRS Roll Method

Remain at any CP for at least 40 sec. to clear timers. Complete one full CW rotation ( $\pm 2$  CP) within 1–30 sec., wait 10–18 sec., and repeat twice for a total of three rotations (RRS3). The Tx changes frequency band within 60 sec.

## Changing Receiver Frequency Band

If you change bands on your transmitter, you must also do so on the receiver. At the Main menu, select **Settings > Transmitter Options** and choose the other frequency band. Return to the Locate screen, where data should begin displaying as transmission resumes in the new band.

## Max Mode



Max Mode helps obtain depth/data readings in high-interference areas when readings are unstable.

- The drill head must remain still during Max Mode readings.
- Hold the trigger at least five seconds to enter Max Mode. Do not consider the data useful unless the reading is stable before the Max Mode timer is full.
- Always take three Max Mode readings; all must be consistent.

See the system operator's manual for additional important information on the use of this feature.

## Signal Attenuation

An **A** icon may appear on the roll indicator and FO results when the receiver is attenuating the Tx signal for depths shallower than 8 ft. This is normal. See the operator's manual if the signal strength is flashing, indicating extreme interference.

Watch our DigiTrak<sup>®</sup> training videos at  
[www.youtube.com/dcikent](http://www.youtube.com/dcikent)

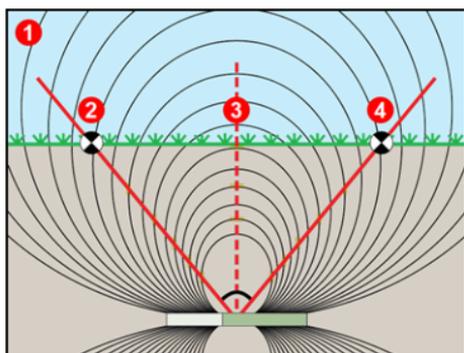


## Basic Locating

1. Find the FLP and RLP by centering the target ball in the box.
2. At the FLP, hold trigger for predicted depth reading.
3. Find the LL by centering the line in the box between the FLP and RLP (see Locate screen on previous page).
4. View depth by holding the trigger at the LL on the line between the FLP and RLP.
5. Holding the trigger longer than five seconds enables Max Mode (see page 6).

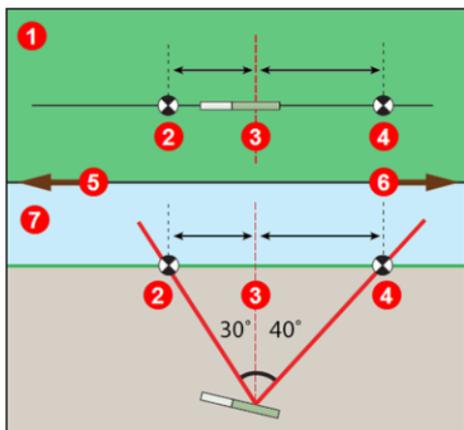
## Transmitter Signal Field Geometry

### Level Transmitter



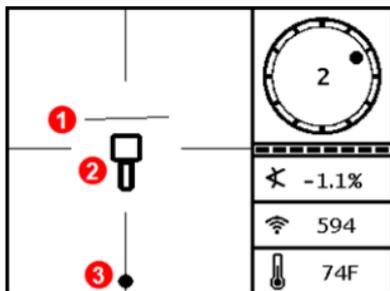
1. Side view
2. RLP: Rear Locate Point
3. LL: Locate Line
4. FLP: Front Locate Point

### Pitched Transmitter

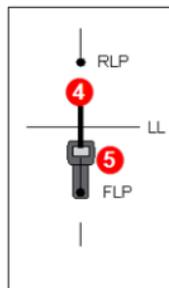


1. Bird's-eye view
2. RLP
3. LL
4. FLP
5. Drill rig
6. Bore path
7. Side view

FLP and RLP are not equidistant from the LL when the transmitter is pitched.



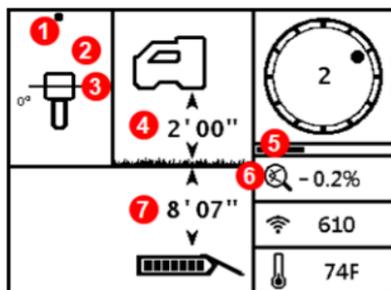
Receiver Locate Screen,  
Approaching LL



Actual Position of  
Receiver and Tx

1. LL (Tx)
2. Box (receiver)
3. Locating ball
4. Tx (underground)
5. Receiver

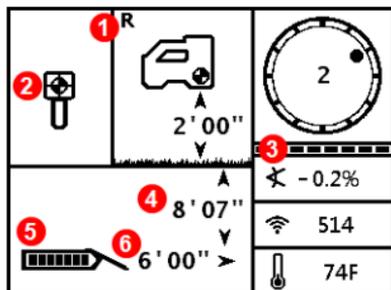
## Transmitter Depth and Predicted Depth



Depth Screen

### Trigger held at LL

1. Front or Rear Locate Point (FLP or RLP)
2. Bird's-eye view
3. Line-in-the-Box at LL
4. HAG on
5. Max Mode timer
6. Max Mode icon
7. Tx depth



Predicted Depth Screen

### Trigger held at FLP

1. Reference indicator
2. *Ball-in-the-Box*™ at FLP only
3. Roll/pitch update meter
4. Tx predicted depth
5. Tx battery strength
6. Horizontal distance between Tx and FLP

For detailed information, see your system operator's manual, available at [www.DigiTrak.com](http://www.DigiTrak.com). If you have questions, contact Customer Service at 425.251.0559 or 800.288.3610 US/CA.