

# USER MANUAL

**PRODUCTS:** IQ-BORE-PRO wireless,  
IQ-BORE-PRO OEM wireless  
IQ-BORE-PRO Custom

Custom includes INU Gyro Assist upgrade.

This manual provides vital information needed to properly operate IQ-BORE-PRO; the WIRELESS MULTI DIRECTIONAL Magnetic Borehole Profiling and Deviation Tool and extract test data for further data analysis.

Probe size and cable length and type are user selectable and can be modified at clients request.



**PRINCIPLE OF OPERATION:** All communication with the underground probe is done via a smartphone or tablet via a dedicated Bluetooth. The phone displays graphical and numerical real time data and orientation of the underground probe.

The IQ-BORE-PRO includes advanced option to automatically switch between Vertical and Horizontal modes and advanced capability of logging boreholes depth and direction in both retract and push modes.

Special custom IQ-BORE-PRO includes integrated INU Gyro Assist module capable of maintaining accurate direction in presence of electro-magnetic interferences.

The process of establishing a link between the probe and the phone requires a few simple steps.

- Step 1: Turn the power ON on the reeling center hub.
- Step 2: Double click on the APP ( IQ-BORE )
- Step 3: Active Bluetooth on the smartphone
- Step 4: Select the IQ-BORE address from nearby Bluetooth devices.
- Step 5: Start the IQ-BORE-PRO APP by clicking START.

## MAIN SCREEN

Upon power up the system performs short internal test and displays the start screen.

The user should press the CONNECT area and follow steps 3 to 5, as stated above.

The graphical display synchronizes graphical and numerical information in time and color.

Red arrow: Compass/probe direction  
Green arrow: Toolface direction

Pitch, Roll, XYZ mag. Fields are shown in numerical format only.

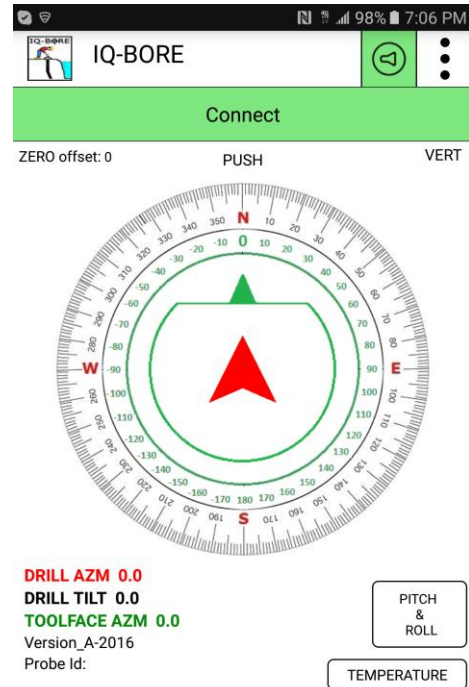
After initial Bluetooth setup and activation, the APP will transition to its first active screen.

At this time the user should press the START button to initiate data transfer between the smartphone and the probe.

After pressing the START button the APP will initiate data transfer and will display real time assuming probe to be oriented in Vertical orientation.

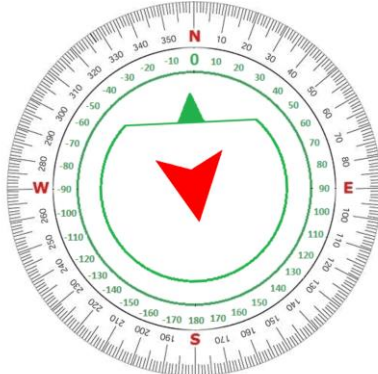
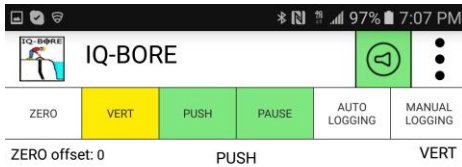
Starting this point the user is able to make operational changes and custom selections via the MENU or visible buttons.

Temperature and Pitch/Roll values are visible after corresponding fields are tapped.



Toggleing between VERT and HORZ modes will switch display and data format between H & V modes.

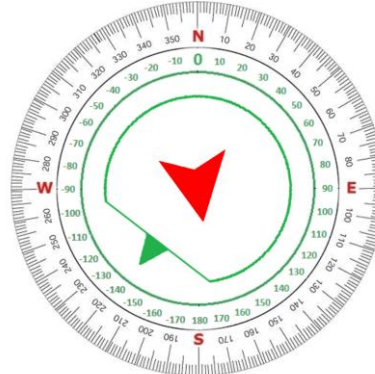
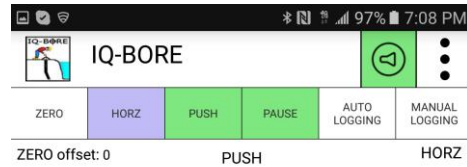
### VERTICAL MODE



**DRILL AZM 171.1**  
**DRILL TILT 4.5**  
**TOOLFACE AZM -2.7**  
 Version\_A-2016  
 Probe Id: 09F2

PITCH & ROLL  
 TEMPERATURE

### HORIZONTAL MODE



**DRILL AZM 170.4**  
**DRILL TILT 85.5**  
**TOOLFACE ROLL -142.5**  
 Version\_A-2016  
 Probe Id: 09F2

P= 85.5  
 R= -142.5  
 TEMPERATURE

In **HORIZONTAL mode** the Main display screen graphically displays the horizontal tilt and roll compensated direction that the magnetic probe points to. The graphical display of borehole direction is in red color, while numerical value is in red color.

The toolface direction is displayed graphically in green color, while the numerical toolface direction is in green color.

In **VERTICAL mode** the Main display screen graphically displays the direction of the center vector through the probe. The graphical display is in red color together with the numerical value in as well. Drill tilt is referenced to a vertical gravity vector perpendicular to the surface. The two values are referred to as: Borehole direction and Borehole inclination.

The toolface marker direction is displayed graphically in green color as well as the numerical toolface direction.

All directional and tilt data are in degrees. Temperature data is in Deg C.

## PUSH / PULL probe control option

When collecting borehole data the user has to choose in which direction to move the probe while the information is recorded.

- 1: The user can select to collect data while the probe is inserted / pushed into the borehole.
- 2: The user can select to collect data while the probe is retracted / pulled from the borehole.

Simple touch of a button seamlessly toggles between the above two data collection mode. Actual probe depth will be displayed on the screen and logged into log file.

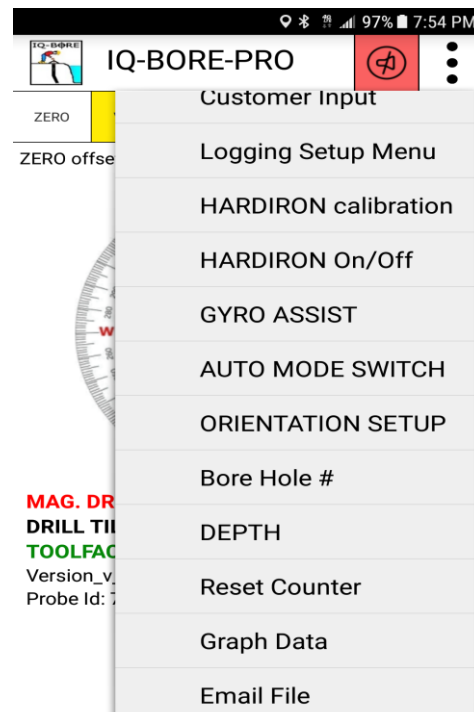
**MAIN MENU** screen is displayed after **MENU 3-three** button section is pressed.

The menu lets the user select important data entry tasks and calibration to be entered or selected while working in the field.

**Not entering basic client info, borehole depth and borehole serial number will restrict Manual and Auto Logging functions.**

The APP also includes in-field HARDIRON calibration, which is paramount when working in a magnetically “dirty” environment.

User can select to e-mail the collected data directly from the APP for further data analysis or as a service to his client.



At any time the user can ZERO probe variables in order to perform random reference readings. By tapping the ZERO button second time will restore factory calibrated values.

**AUTO MODE SWITCH** is an advanced function that permits the probe system to automatically switch between Vertical and Horizontal probe orientation.

This option is most useful when the borehole includes sharp changes of direction and user requires the probe to continue in the most accurate setting.

**GYRO ASSIST** is an advanced custom option which allows concurrent use of a special INU non-magnetic azimuth adapter. This custom upgrade allows users to use IQ-BORE-PRO inside metal pipes or next to large electromagnetic interference sources that alter magnetic field and damage azimuth accuracy.

This advanced option permits users to set the probe in arbitrary direction, synchronize with magnetic direction or zero the inertial heading.

When tapping the INERTIAN HEADING button, the main display will swap from graphically displaying Magnetic Azimuth to displaying the INERTIAL HEADING. Tapping again will swp variable to their original display scheme.

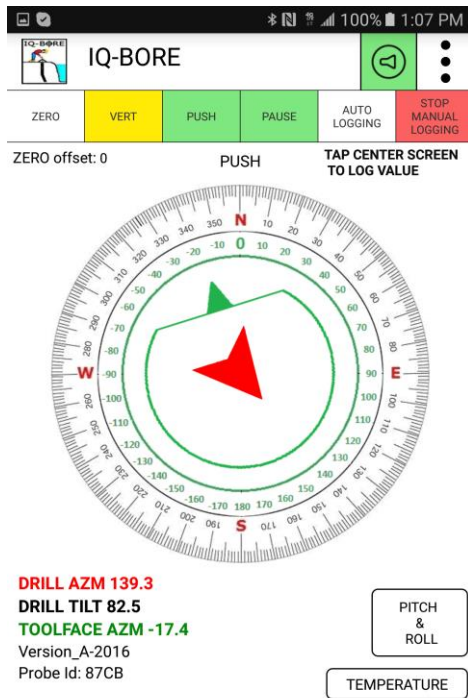


IQ-BORE-PRO is an advanced borehole profiling tool capable operating in both homogeneous and dirty magnetic fields. Gyro Assist option makes the tool useful in areas of high Ferrous content, near motors, batteries of other electromagnetic sources that alter surrounding magnetic field.

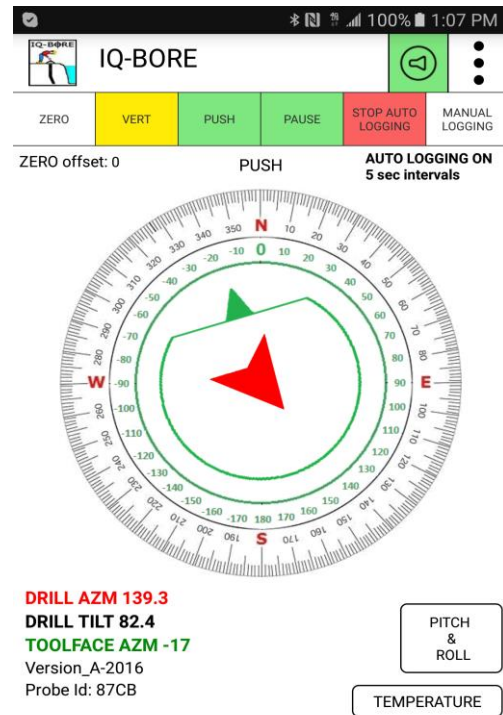
## LOGGING FEATURES

The IQ-BORE can be used for manual or automatic continuous data logging. Before activating logging feature the user MUST enter customer name and borehole number. After that either mode can be used. In MANUAL logging the user is required to TAP the screen each time he wants to log the orientation of the probe. Tapping on the MANUAL logging button second time will terminate Manual logging. In AUTO logging mode the APP will periodically poll the probe based on preset time interval and store data into the corresponding file. Tapping on the AUTO logging button second time will terminate AUTO logging.

### MANUAL LOGGING



### AUTO LOGGING



For additional information or clarifications please contact AOSI at 908-474-9595 sales@aositilt.com