

## Zoom 90 Bluetooth Range with Pixel 4a

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What is the Bluetooth range from a Pixel 4a phone to a GeoMax Zoom 90 robot?

The Pixel 4a phone:



is a low cost Android smartphone retailing for around \$350 US. It has a large 3140 mAh LiPo battery with USB 2.0 fast charging. The Pixel 4a has a 5.0 Bluetooth specification:

Bluetooth 5.0, A2DP, LE, aptX HD

Bluetooth 5 implies 2X speed and 4X the distance of previous generations. (See <a href="https://www.bluetooth.com/wp-content/uploads/2019/03/Bluetooth">https://www.bluetooth.com/wp-content/uploads/2019/03/Bluetooth</a> 5-FINAL.pdf)

The Zoom 90 has a ZRT82 'Long-Range Bluetooth' handle:



What is the range between these two devices in a real-world test? I set my robot on a rise pointing east.



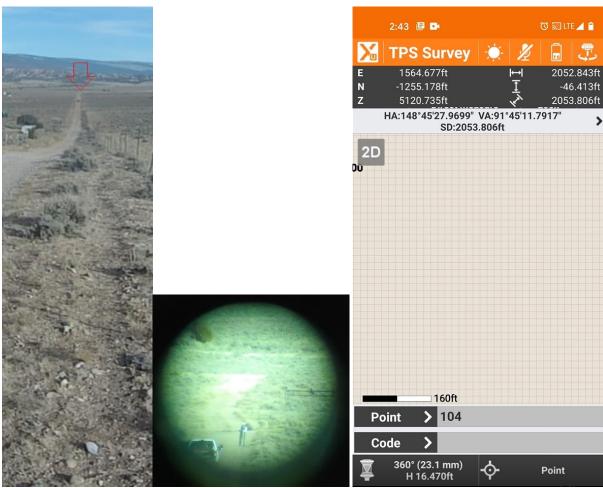
Once setup and locked on the prism, the Pixel 4a was disconnected from the robot both were transported to approximately 2,500-foot distance while maintaining lock.

Communication was attempted at approximately 100-foot intervals until the connection was made at 2,050 feet. Repeated connections and disconnections were then made,





and distance measured:



So, in an open environment, the Pixel 4a is usable at 2,000 feet (600 meters) from the robot. This is nearly twice the range that I expect from the Surveyor 2 (1,200 ft), Mini-2 (1,200 ft) and RT4 (1,000 ft) and should be satisfactory for most robotic applications.