

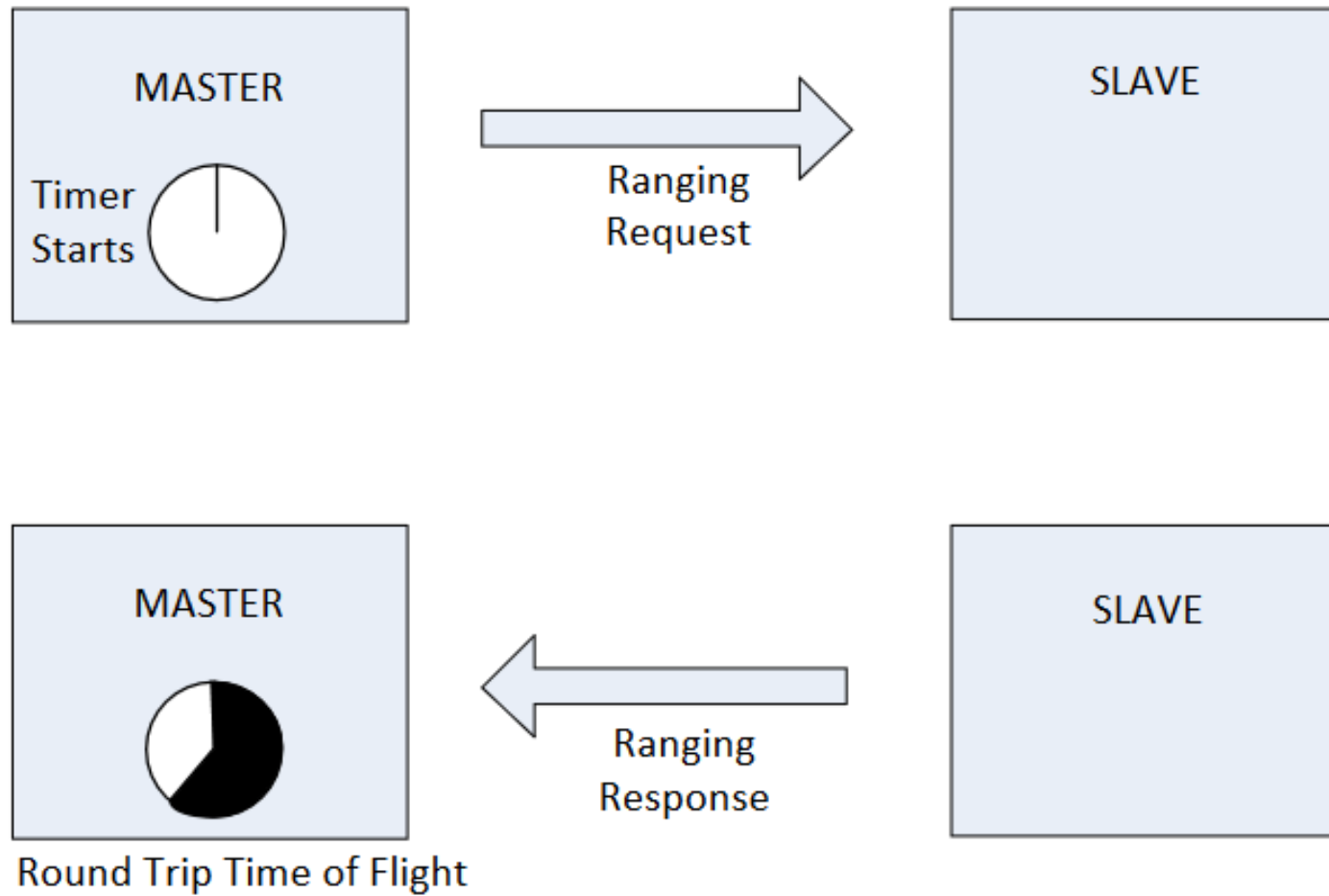


**SX1280**

**2.4 GHz Transceiver**

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# **An Introduction to Ranging with the SX1280 Transceiver**



**Figure 1: Time of Flight Measurement Process**

## 7.1 Precision Measurement Setup

In the line of sight range test the ranging Master is deployed 171.2 m from the Slave, both mounted at a height of 1.8 m from the ground with clear, optical, line of sight between both units and negligible clutter due to the defoliated vegetation at ground level.

NB: although depicted in snow, experiments were performed in a variety of climatic conditions with no measureable influence.



**Figure 13: Ranging Test Site**  
**Left: Ranging Slave, view towards Master**  
**Right: Ranging Master view towards Slave**

## 7.2 Precision Measurement Results

Here we see that at the highest spreading factor and bandwidth combination, we obtain approximately 1 m of RMS ranging precision. This corresponds to a dilution of precision of a factor of roughly 2 to 2.5 compared with the ideal (coaxial cable) channel.

