Team 10:  
- Evan Giordano  
- Josh Radjavitch  
- John Ferguson

25’ – 26’ S.T.A.R.S. Capstone

Design and Description

This description is prepared to serve the purpose of giving the BID4R lab and team an idea both conceptually and visually of how Team 10 intends to achieve the charging station’s goal. The charging station is meant to provide swarm robots with the ability to have a virtually endless operational life within an eight by ten feet wood bordered arena in the S125 BID4R lab. Team 10 must have a respective swarm bot position itself above a Qi wireless charging transmitter(tx) so that the tx is aligned with the receiver(rx) mounted on the bottom chassis. The bottom of the chassis currently measures to 5/8 of an inch from the floor. Therefore, there must be a mount to close the gap between the tx and the rx. Team 10 shall 3D-print a rx mount to attach to the bottom of the chassis; this should close the distance to be within effective charging range that the Qi wireless chargers require to charge properly, which is two to eight millimeters(mm). There should be no physical conflict between the rx and tx in the arena. Team 10 aims to create a ‘parking space’ bordered with reflective tape on the inner long edges of the arena wall. This will help to better assist the robot in positioning itself to the correct place for the Qi chargers to align properly. The Qi wireless charger tx has a chip connected to the coil. That chip shall be mounted to the inner wall as close to the floor as possible. This is done to give as much wire space possible to the loose wires between the chip and coil. The separate document is for the visual clarification with associated measurements to better clear the concept.