Robotics lab 3

Exercise 3 - Investigating Sonar

1. Minimum distance – 24cm ; Maximum distance - 110cm
2. Maximum angle of incidence - 49 degrees

|  |  |
| --- | --- |
| **Actual distance** | **Reported distance** |
| 20cm | 23cm |
| 40cm | 41cm |
| 60cm | 61cm |
| 80cm | 82cm |
| 100cm | 101cm |

4.

|  |  |
| --- | --- |
| **40cm** | **100cm** |
| 41cm | 103cm |
| 41cm | 105cm |
| 41cm | 107cm |
| 40cm | 255cm |
| 41cm | 101cm |
| 41cm | 104cm |
| 40cm | 104cm |
| 40cm | 105cm |
| 41cm | 255cm |
| 40cm | 98cm |

NB: 100cm is very close to the maximum range of our sensor, so demonstrates a lot of scatter. Note that in Q1, a greater distance could be observed by gradually increasing distance, rather than immediately placing the sensor at a large distance.

5. At moderate distances, all results are reasonable measurements.

At extreme distances (i.e. Results for 100cm in Q4) I would call 80% ‘not garbage’ with 50% being ‘somewhat reliable’.