**Catching the Perfect SAR Waves: “Radar” System Calibration**

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| **1. Standard Ruler** | **2. Small Box or Indoor wall** | **3. Multimeter** | **4. Sharp® GP2Y0A02YK0F Sensor** | **5. Masking Tape** |

**Note: The GP2Y0A02YK0F infrared takes a continuous distance reading and returns a corresponding analog voltage with a range 20 cm to 150 cm.**

1. **Measuring Tape Setup**
	1. Choose a relatively flat surface.
	2. Place 170 cm of masking tape on the surface.
	3. Using a ruler and marker, label 10 cm apart starting at 20 cm and ending at 150.



1. **Sensor and Multimeter Setup**
	1. Place the front of the sensor’s light emitter/detector at 20 cm.
	2. Connect a multimeter to read analog voltages (set at 20 V).
	3. Turn on your “radar” system unit and record voltage and distance using the

 Mathematical Model handout.



1. **Sensor Relocation**
	1. Shift the front of the sensor’s light emitter/detector to 30 cm.
	2. Record voltage and distance.
	3. Keep shifting sensor back 10 cm and record voltage and distance until it reaches 150 cm.



**Alternative Calibration using Box and Measuring Tape Placement**

 