Affordable and Portable Multi-Spectral Imaging based on Raspberry Pi (MSI-RPi) for Plant Phenotype Studies - User Guide

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Product Overview

The designed instrument is conceived to be a low-cost portable prototype based on the non-expensive components that allow an easy use in variety of applications. We use Raspberry Pi, Raspberry Pi Camera, multiplexer, and filters for prototyping the conceptual design.

Hardware Assembly

Multi-camera adapter module hardware assembly is fairly easy by connecting 4 cameras to the input ports A, B, C, D and connecting the output port to RPI board's camera CSI connector. Then plug the multi-camera adapter module into the RPI board pin header connector with aligning the pin 1 correctly. The filters are mounted as a plug-and-play over the camera lens.

Quick Start

Before running the code, the following pre-request software packages need to be installed.

$ sudo apt-get update

$ sudo pip3 install RPi.GPIO

Run the below command to enable the i2c (one time process).

$ sudo raspi-config

then choose “Interfacing Options” , choose “P5 I2C”, choose “Yes”.

Download the code library

$ git clone https://github.com/ajayarunachalam/SI-RPi.git

Navigate to the updated_latest_camera_automation_V1 folder

$ sudo bash Run.sh