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LAMPIRAN A

Listing Program

```
#define CONFIGURATION_H_VERSION 02000905

//=====
//=====
//===== Getting Started
//=====
//=====

/**
 * Here are some useful links to help get your machine configured and
 calibrated:
 *
 * Example Configs:
 https://github.com/MarlinFirmware/Configurations/branches/all
 *
 * Průša Calculator: https://blog.prusaprinters.org/calculator\_3416/
 *
 * Calibration Guides: https://reprap.org/wiki/Calibration
 *
 https://reprap.org/wiki/Triffid\_Hunter%27s\_Calibration\_Guide
 * https://sites.google.com/site/repraplogphase/calibration-
 of-your-reprap
 * https://youtu.be/wAL9d7FgInk
 *
 * Calibration Objects: https://www.thingiverse.com/thing:5573
 * https://www.thingiverse.com/thing:1278865
 */

// @section info

// Author info of this build printed to the host during boot and M115
#define STRING_CONFIG_H_AUTHOR "(none, default config)" //
Who made the changes.
##define CUSTOM_VERSION_FILE Version.h // Path from the root
```

directory (no quotes)

```
/**
 * *** VENDORS PLEASE READ ***
 *
 * Marlin allows you to add a custom boot image for Graphical LCDs.
 * With this option Marlin will first show your custom screen followed
 * by the standard Marlin logo with version number and web URL.
 *
 * We encourage you to take advantage of this new feature and we also
 * respectfully request that you retain the unmodified Marlin boot
 * screen.
 */

// Show the Marlin bootscreen on startup. ** ENABLE FOR
// PRODUCTION **
#define SHOW_BOOTSCREEN

// Show the bitmap in Marlin/_Bootscreen.h on startup.
// #define SHOW_CUSTOM_BOOTSCREEN

// Show the bitmap in Marlin/_Statusscreen.h on the status screen.
// #define CUSTOM_STATUS_SCREEN_IMAGE

// @section machine

// Choose the name from boards.h that matches your setup
#ifndef MOTHERBOARD
  #define MOTHERBOARD BOARD_RAMPS_14_EFB
#endif

/**
 * Select the serial port on the board to use for communication with the
 * host.
 * This allows the connection of wireless adapters (for instance) to non-
 * default port pins.
 * Serial port -1 is the USB emulated serial port, if available.
 * Note: The first serial port (-1 or 0) will always be used by the Arduino
 * bootloader.
```

```

*
* :[-1, 0, 1, 2, 3, 4, 5, 6, 7]
*/
#define SERIAL_PORT 0

/**
 * Serial Port Baud Rate
 * This is the default communication speed for all serial ports.
 * Set the baud rate defaults for additional serial ports below.
 *
 * 250000 works in most cases, but you might try a lower speed if
 * you commonly experience drop-outs during host printing.
 * You may try up to 1000000 to speed up SD file transfer.
 *
 * :[2400, 9600, 19200, 38400, 57600, 115200, 250000, 500000,
1000000]
*/
#define BAUDRATE 250000
//#define BAUD_RATE_GCODE // Enable G-code M575 to set the
baud rate

/**
 * Select a secondary serial port on the board to use for communication
with the host.
 * Currently Ethernet (-2) is only supported on Teensy 4.1 boards.
 * :[-2, -1, 0, 1, 2, 3, 4, 5, 6, 7]
*/
//#define SERIAL_PORT_2 -1
//#define BAUDRATE_2 250000 // Enable to override BAUDRATE

/**
 * Select a third serial port on the board to use for communication with
the host.
 * Currently only supported for AVR, DUE, LPC1768/9 and
STM32/STM32F1
 * :[-1, 0, 1, 2, 3, 4, 5, 6, 7]
*/
//#define SERIAL_PORT_3 1
//#define BAUDRATE_3 250000 // Enable to override BAUDRATE

```

```

// Enable the Bluetooth serial interface on AT90USB devices
//#define BLUETOOTH

// Name displayed in the LCD "Ready" message and Info menu
//#define CUSTOM_MACHINE_NAME "3D Printer"

// Printer's unique ID, used by some programs to differentiate between
machines.
// Choose your own or use a service like
https://www.uuidgenerator.net/version4
//#define MACHINE_UUID "00000000-0000-0000-0000-
000000000000"

/**
 * Stepper Drivers
 *
 * These settings allow Marlin to tune stepper driver timing and enable
advanced options for
 * stepper drivers that support them. You may also override timing
options in Configuration_adv.h.
 *
 * Use TMC2208/TMC2208_STANDALONE for TMC2225 drivers and
TMC2209/TMC2209_STANDALONE for TMC2226 drivers.
 *
 * Options: A4988, A5984, DRV8825, LV8729, L6470, L6474,
POWERSTEP01,
 *     TB6560, TB6600, TMC2100,
 *     TMC2130, TMC2130_STANDALONE, TMC2160,
TMC2160_STANDALONE,
 *     TMC2208, TMC2208_STANDALONE, TMC2209,
TMC2209_STANDALONE,
 *     TMC26X, TMC26X_STANDALONE, TMC2660,
TMC2660_STANDALONE,
 *     TMC5130, TMC5130_STANDALONE, TMC5160,
TMC5160_STANDALONE
 * :['A4988', 'A5984', 'DRV8825', 'LV8729', 'L6470', 'L6474',
'POWERSTEP01', 'TB6560', 'TB6600', 'TMC2100', 'TMC2130',
'TMC2130_STANDALONE', 'TMC2160',

```



```
TMC2160_STANDALONE', 'TMC2208',  
TMC2208_STANDALONE', 'TMC2209',  
TMC2209_STANDALONE', 'TMC26X', 'TMC26X_STANDALONE',  
TMC2660', 'TMC2660_STANDALONE', 'TMC5130',  
TMC5130_STANDALONE', 'TMC5160',  
TMC5160_STANDALONE']
```

```
*/  
#define X_DRIVER_TYPE A4988  
#define Y_DRIVER_TYPE A4988  
#define Z_DRIVER_TYPE A4988  
//#define X2_DRIVER_TYPE A4988  
//#define Y2_DRIVER_TYPE A4988  
//#define Z2_DRIVER_TYPE A4988  
//#define Z3_DRIVER_TYPE A4988  
//#define Z4_DRIVER_TYPE A4988  
//#define I_DRIVER_TYPE A4988  
//#define J_DRIVER_TYPE A4988  
//#define K_DRIVER_TYPE A4988  
#define E0_DRIVER_TYPE A4988  
//#define E1_DRIVER_TYPE A4988  
//#define E2_DRIVER_TYPE A4988  
//#define E3_DRIVER_TYPE A4988  
//#define E4_DRIVER_TYPE A4988  
//#define E5_DRIVER_TYPE A4988  
//#define E6_DRIVER_TYPE A4988  
//#define E7_DRIVER_TYPE A4988
```

```
/**
```

```
* Additional Axis Settings
```

```
*
```

```
* AXISn_NAME defines the letter used to refer to the axis in (most) G-  
code commands.
```

```
* By convention the names and roles are typically:
```

- * 'A' : Rotational axis parallel to X
- * 'B' : Rotational axis parallel to Y
- * 'C' : Rotational axis parallel to Z
- * 'U' : Secondary linear axis parallel to X
- * 'V' : Secondary linear axis parallel to Y
- * 'W' : Secondary linear axis parallel to Z

```

*
* Regardless of these settings the axes are internally named I, J, K.
*/
#ifdef I_DRIVER_TYPE
  #define AXIS4_NAME 'A' // :['A', 'B', 'C', 'U', 'V', 'W']
#endif
#ifdef J_DRIVER_TYPE
  #define AXIS5_NAME 'B' // :['B', 'C', 'U', 'V', 'W']
#endif
#ifdef K_DRIVER_TYPE
  #define AXIS6_NAME 'C' // :['C', 'U', 'V', 'W']
#endif

// @section extruder

// This defines the number of extruders
// :[0, 1, 2, 3, 4, 5, 6, 7, 8]
#define EXTRUDERS 1

// Generally expected filament diameter (1.75, 2.85, 3.0, ...). Used for
// Volumetric, Filament Width Sensor, etc.
#define DEFAULT_NOMINAL_FILAMENT_DIA 1.75

// For Cyclops or any "multi-extruder" that shares a single nozzle.
// #define SINGLENOZZLE

// Save and restore temperature and fan speed on tool-change.
// Set standby for the unselected tool with M104/106/109 T...
#if ENABLED(SINGLENOZZLE)
  // #define SINGLENOZZLE_STANDBY_TEMP
  // #define SINGLENOZZLE_STANDBY_FAN
#endif

/**
 * Multi-Material Unit
 * Set to one of these predefined models:
 *
 * PRUSA_MMU1      : Průša MMU1 (The "multiplexer" version)
 * PRUSA_MMU2      : Průša MMU2

```

```

* PRUSA_MMU2S      : Průša MMU2S (Requires MK3S extruder
with motion sensor, EXTRUDERS = 5)
* EXTENDABLE_EMU_MMU2  : MMU with configurable number
of filaments (ERCF, SMuFF or similar with Průša MMU2 compatible
firmware)
* EXTENDABLE_EMU_MMU2S : MMUS with configurable
number of filaments (ERCF, SMuFF or similar with Průša MMU2
compatible firmware)
* Requires NOZZLE_PARK_FEATURE to park print head in case
MMU unit fails.
* See additional options in Configuration_adv.h.
*/
#define MMU_MODEL PRUSA_MMU2

// A dual extruder that uses a single stepper motor
#define SWITCHING_EXTRUDER
#if ENABLED(SWITCHING_EXTRUDER)
Angles for E0, E1[, E2, E3]
  #if EXTRUDERS > 3
    #define SWITCHING_EXTRUDER_E23_SERVO_NR 1
  #endif
#endif

```

Listing Program Arduino Modul SD Card dan Sensor Getar

```

#include <SPI.h>
#include <SD.h>
#include <movingAvg.h>
#define pinSensor A0
const int chipSelect = 10;
int adc;
int movingAdc;
float volt;
unsigned long pref = 0;
movingAvg maf(10);
void setup() {
  // put your setup code here, to run once:
  Serial.begin(9600);
  pinMode(pinSensor, INPUT);
}

```

```

maf.begin();

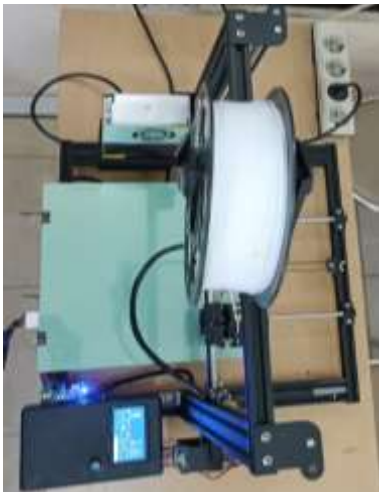
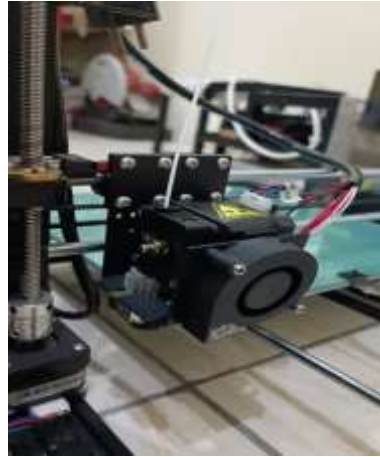
// see if the card is present and can be initialized:
if (!SD.begin(chipSelect)) {
  Serial.println("Card failed, or not present");
  // don't do anything more:
  while (1);
}

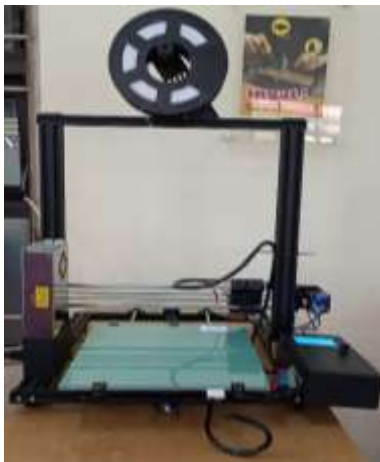
}

void loop() {
  adc = analogRead(pinSensor);
  movingAdc = maf.reading(adc);
  volt = movingAdc * (5.0 / 1023);
  Serial.print(movingAdc);
  Serial.print("\t-300");
  Serial.print("\t300\n");
  //
  // File dataFile = SD.open("datalog.txt", FILE_WRITE);
  //
  // // if the file is available, write to it:
  // if (dataFile) {
  //   if ((millis() - pref) >= 3000) {
  //     dataFile.print("geetaran=" + String(movingAdc));
  //     dataFile.println(" , teg sensor=" + String(volt) + " Volt");
  //     dataFile.close();
  //     // print to the serial port too:
  //     Serial.println("SENDING TO SD");
  //     pref = millis();
  //   }
  // }
  //
  // // if the file isn't open, pop up an error:
  // else {
  //   Serial.println("error opening datalog.txt");
  // }
}

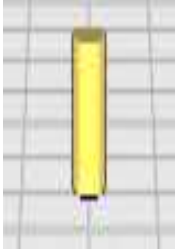










```

LAMPIRAN B
Gambar Alat Jadi





Hasil Cetak Desain 3D Printing

Desain UltiMaker	Hasil Cetak 3D Printing
	
	
	
	
	
	

BIODATA PENULIS



Nama : Ricky Eko Saputra
Tempat/Tanggal Lahir : Jakarta, 11 Oktober 2002
Alamat : Perumahan Villa Mas Indah Blok A
10 No. 15 G, RT03/RW 18, Perwira,
Bekasi Utara, Bekasi, Jawa Barat.
Kode Pos 17122.
Email : saputrarickyeko11@gmail.com
Telepon/Hp : +6289505791801
Hobi : Bermain futsal, bola dan bersepeda
Motto : “Teruslah berbuat baik, sesungguhnya allah menyukai orang-orang yang berbuat baik.”

Riwayat Pendidikan

- SD Negeri Perwira 1 Tahun 2008 – 2014
- SMP Negeri 37 Bekasi Tahun 2014 – 2017
- SMK Negeri 11 Bekasi Tahun 2017 – 2020
Jurusan TKR Otomotif
- Politeknik Negeri Cilacap Tahun 2020 – 2023

Penulis telah mengikuti sidang Tugas Akhir pada tanggal 14 Agustus 2023 sebagai salah satu persyaratan untuk memperoleh gelar Ahli Madya (A.Md).