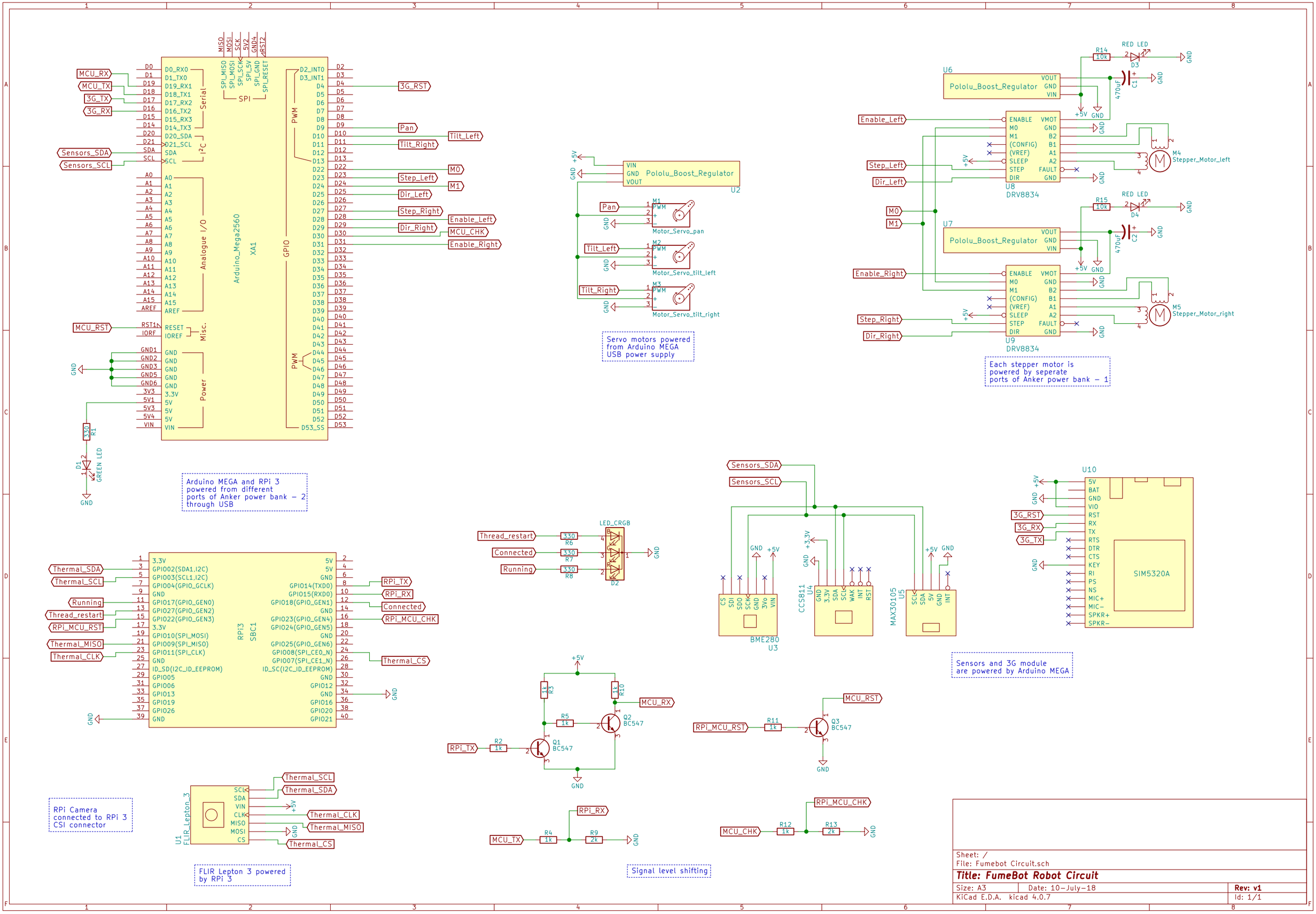
Arduino_Mega2560
XA1
Serial
I2C
SPI
Analogue I/O
Misc.
Power
GPIO
PWM
MCU_RX
MCU_TX
3G_TX
3G_RX
Sensors_SDA
Sensors_SCL
MCU_RST
3G_RST
Pan
Tilt_Left
Tilt_Right
M0
M1
Step_Left
Dir_Left
Step_Right
Dir_Right
Enable_Left
MCU_CHK
Enable_Right
R1 330
D1 GREEN LED
Arduino MEGA and RPi 3 powered from different ports of Anker power bank – 2 through USB
Pololu_Boost_Regulator
U2
Motor_Servo_pan
Motor_Servo_tilt_left
Motor_Servo_tilt_right
Servo motors powered from Arduino MEGA USB power supply
U6
U7
R14 10k
R15 10k
RED LED
D3
D4
470uF
C1
C2
U8
U9
DRV8834
M4 Stepper_Motor_left
M5 Stepper_Motor_right
Each stepper motor is powered by seperate ports of Anker power bank – 1
RPi3
SBC1
Thermal_SDA
Thermal_SCL
Running
Thread_restart
RPi_MCU_RST
Thermal_MISO
Thermal_CLK
RPi_TX
RPi_RX
Connected
RPi_MCU_CHK
Thermal_CS
Thread_restart
Connected
Running
R6 330
R7 330
R8 330
LED_CRGB
D2
Sensors_SDA
Sensors_SCL
BME280
U3
CCS811
U4
MAX30105
U5
U10
SIM5320A
3G_RST
3G_RX
3G_TX
Sensors and 3G module are powered by Arduino MEGA
R3 1k
R10 1k
R5 1k
R2 1k
Q1 BC547
Q2 BC547
MCU_RX
RPi_TX
RPi_MCU_RST
R11 1k
Q3 BC547
MCU_RST
RPi Camera connected to RPi 3 CSI connector
U1 FLIR_Lepton_3
Thermal_SCL
Thermal_SDA
Thermal_CLK
Thermal_MISO
Thermal_CS
FLIR Lepton 3 powered by RPi 3
RPi_RX
MCU_TX
R4 1k
R9 2k
Signal level shifting
RPi_MCU_CHK
MCU_CHK
R12 1k
R13 2k
Sheet: /
File: Fumebot Circuit.sch
Title: FumeBot Robot Circuit
Size: A3
Date: 10-July-18
Rev: v1
KiCad E.D.A. kicad 4.0.7
Id: 1/1