Sheet: VoltageReg
Vin_SEN VIN_SEN
File: VoltageReg.sch

Sheet: dji_power
PWR_ON PWR_ON
I_SEN I_SEN
Vout_SEN VOUT_SEN
File: dji_power.sch

Sheet: CAN1
CAN_TX CAN1_TX
CAN_RX CAN1_RX
File: CAN_IDC.sch

Sheet: CAN2
CAN_TX CAN2_TX
CAN_RX CAN2_RX
File: CAN_PH.sch

Sheet: RS485
TX RS485_TX
RX RS485_RX
TXEN RS485_TXEN
File: RS485.sch

Sheet: AT24C64
SCL SCL
SDA SDA
File: AT24C64.sch

Sheet: 24V_2IN_2OUT
OUT1 OUT1
OUT2 OUT2
IN1 IN1
IN2 IN2
File: 24V_2IN_2OUT.sch

Sheet: MCU
RS485_TX UART4_TX
RS485_RX UART4_RX
RS485_TXEN UART4_TXEN

Sheet: USB
VBUS VBUS_SEN
USB_DM USB_DM
USB_DP USB_DP
File: USBC_UFP.sch

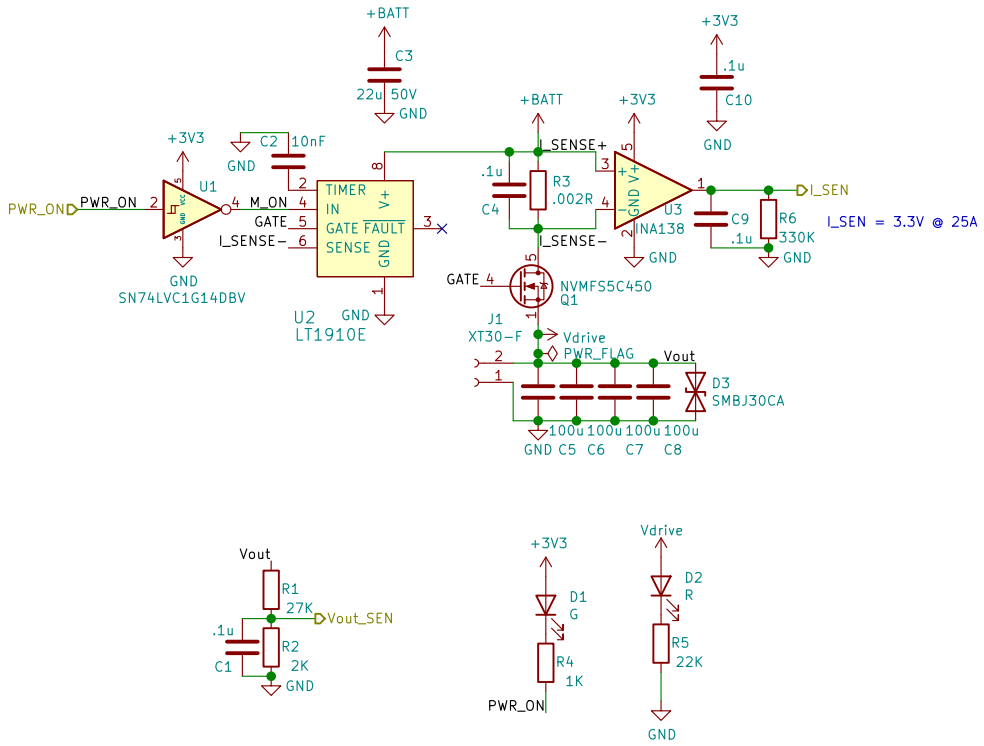
CAN1_TX CAN1_TX
CAN1_RX CAN1_RX
CAN2_TX CAN2_TX
CAN2_RX CAN2_RX
OUT1 GPIO_OUT1
OUT2 GPIO_OUT2
PWR_ON ACTUATOR_PWR
IN1 GPIO_IN1
IN2 GPIO_IN2
I_SEN ADC1_IN10
VIN_SEN ADC1_IN11
VOUT_SEN ADC1_IN12
SCL I2C1_SCL
SDA I2C1_SDA
File: STM32F405.sch

Control DJI to steer active caster module
Designed by: Jeff Lai
HKU M2 Robocon Studio

Sheet: /
File: AbsoluteEncoderBoard.sch

Title: DJI Encoder Shield

Size: A4	Date: 2020-11-08	**Rev: R01**
KiCad E.D.A. kicad 5.1.9-73d0e3b20d88ubuntu20.04.1		Id: 1/10

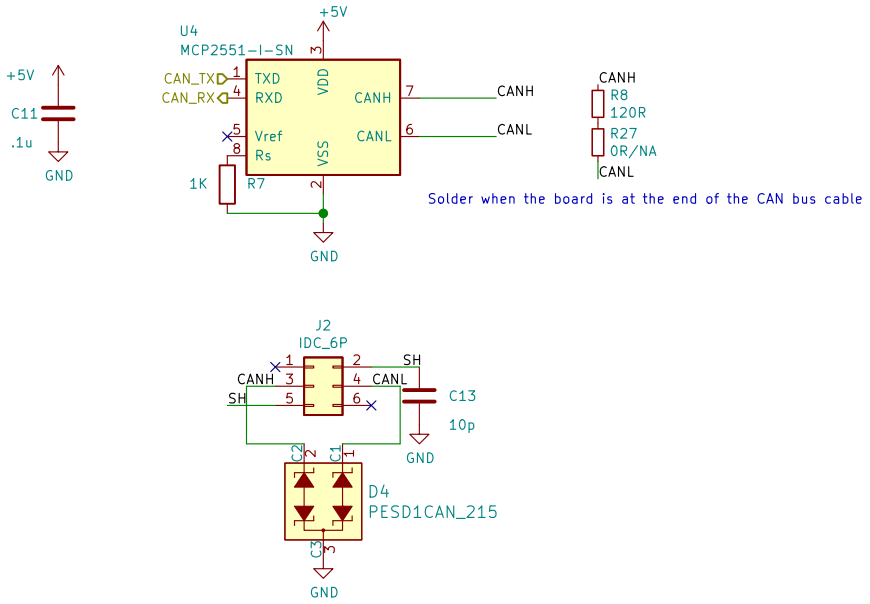


Control DJI to steer active caster module
Designed by: Jeff Lai
HKU M2 Robocon Studio

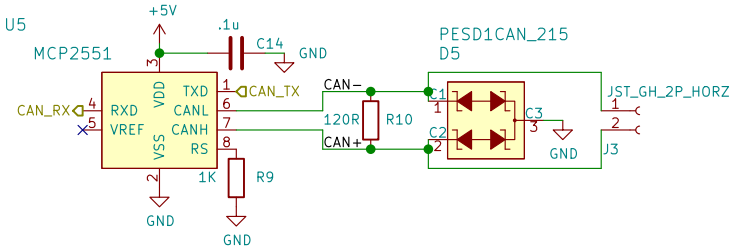
Sheet: /dji_power/
File: dji_power.sch

Title: DJI Encoder Shield

Size: A4	Date: 2020-11-08	**Rev: R01**
KiCad E.D.A. kicad 5.1.9-73d0e3b20d88ubuntu20.04.1		Id: 2/10



Sheet: /CAN1/		
File: CAN_IDC.sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 5.1.9-73d0e3b20d88ubuntu20.04.1		Id: 3/10

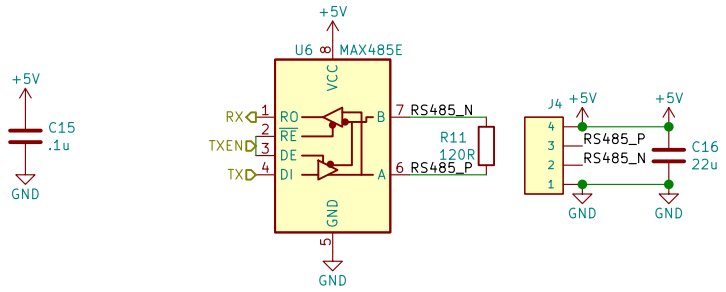


Control DJI to steer active caster module
Designed by: Jeff Lai
HKU M2 Robocon Studio

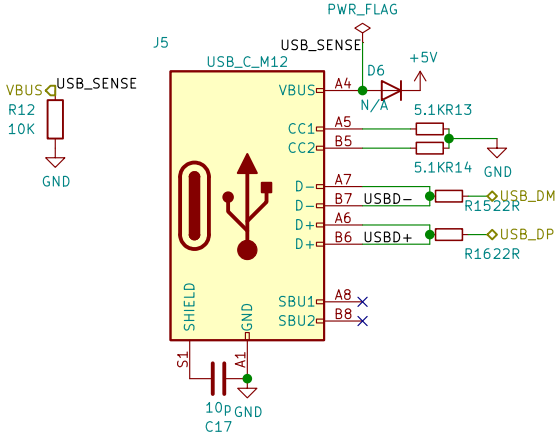
Sheet: /CAN2/
File: CAN_PH.sch

Title: DJI Encoder Shield

Size: A4	Date: 2020-11-08	**Rev: R01**
KiCad E.D.A. kicad 5.1.9-73d0e3b20d88ubuntu20.04.1		Id: 4/10

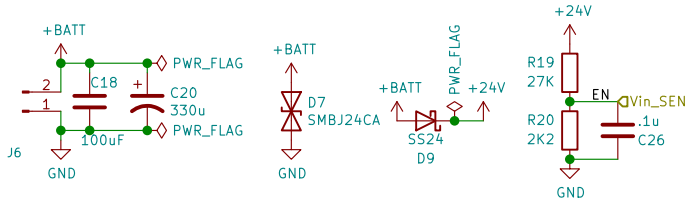


Sheet: /RS485/		
File: RS485.sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 5.1.9-73d0e3b20d88ubuntu20.04.1		Id: 5/10

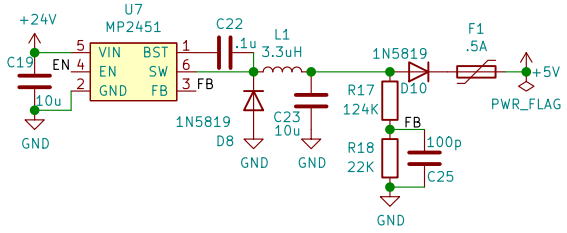


Sheet: /USB/		
File: USBC_UFP.sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 5.1.9-73d0e3b20d88ubuntu20.04.1		Id: 6/10

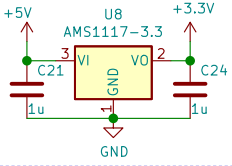
24V Power Input Protection



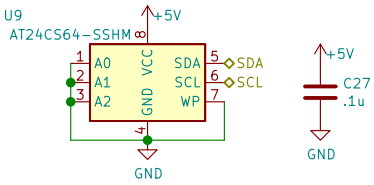
24V to 5V Buck Converter



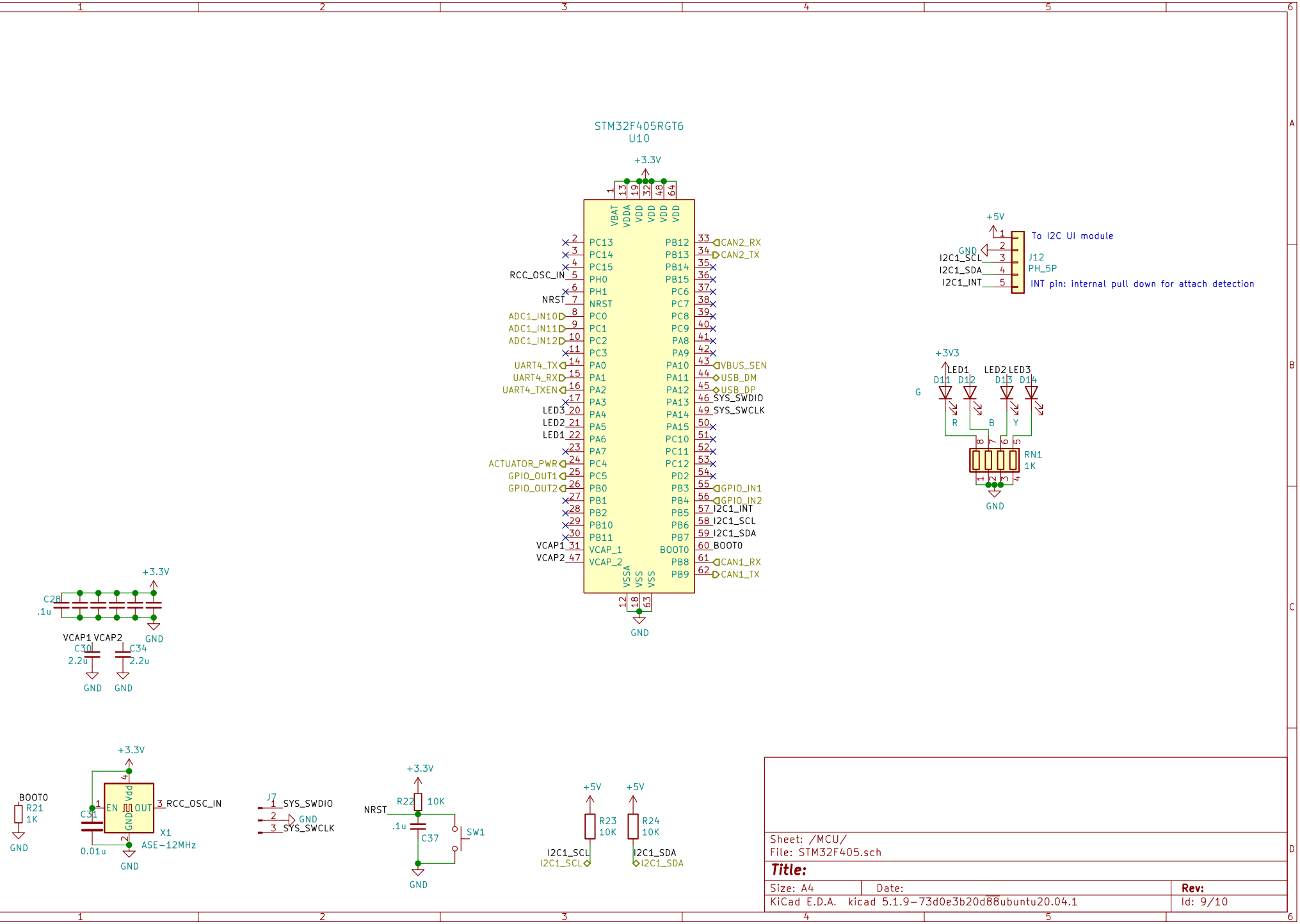
5V to 3V3 LDO

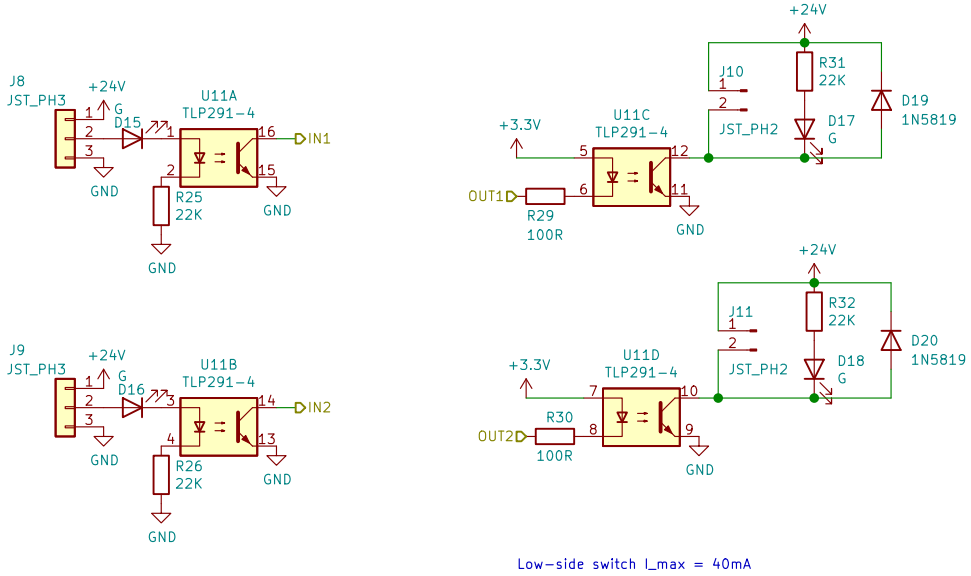


Sheet: /VoltageReg/	
File: VoltageReg.sch	
Title:	
Size: A4	Date:
KiCad E.D.A. kicad 5.1.9-73d0e3b20d88ubuntu20.04.1	Id: 7/10



Sheet: /AT24C64/		
File: AT24C64.sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 5.1.9-73d0e3b20d88ubuntu20.04.1		Id: 8/10


STM32F405RGT6
U10
+3.3V
VBAT
VDDA
VDD
VDD
VDD
VDD
PC13
PC14
PC15
PH0
PH1
NRST
PC0
PC1
PC2
PC3
PA0
PA1
PA2
PA3
PA4
PA5
PA6
PA7
PC4
PC5
PB0
PB1
PB2
PB10
PB11
VCAP_1
VCAP_2
PB12
PB13
PB14
PB15
PC6
PC7
PC8
PC9
PA8
PA9
PA10
PA11
PA12
PA13
PA14
PA15
PC10
PC11
PC12
PD2
PB3
PB4
PB5
PB6
PB7
BOOT0
PB8
PB9
VSSA
VSS
VSS
GND
CAN2_RX
CAN2_TX
RCC_OSC_IN
NRST
ADC1_IN10
ADC1_IN11
ADC1_IN12
UART4_TX
UART4_RX
UART4_TXEN
LED3
LED2
LED1
ACTUATOR_PWR
GPIO_OUT1
GPIO_OUT2
VBUS_SEN
USB_DM
USB_DP
SYS_SWDIO
SYS_SWCLK
GPIO_IN1
GPIO_IN2
I2C1_INT
I2C1_SCL
I2C1_SDA
BOOT0
CAN1_RX
CAN1_TX
VCAP1
VCAP2
+5V
GND
I2C1_SCL
I2C1_SDA
I2C1_INT
To I2C UI module
J12
PH_5P
INT pin: internal pull down for attach detection
+3V3
LED1
LED2
LED3
D11
D12
D13
D14
G
R
B
Y
RN1
1K
C28
.1u
VCAP1
VCAP2
C30
C34
2.2u
2.2u
BOOT0
R21
1K
C31
0.01u
EN
GND
Vdd
OUT
X1
ASE-12MHz
RCC_OSC_IN
J7
SYS_SWDIO
GND
SYS_SWCLK
NRST
R22
10K
.1u
C37
SW1
R23
10K
R24
10K
Sheet: /MCU/
File: STM32F405.sch
Title:
Size: A4
Date:
Rev:
KiCad E.D.A. kicad 5.1.9-73d0e3b20d88ubuntu20.04.1
Id: 9/10



Sheet: /24V_2IN_2OUT/		
File: 24V_2IN_2OUT.sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 5.1.9-73d0e3b20d88ubuntu20.04.1		Id: 10/10