Fork Lift Pin Assignment

1 Jason's Car with Fan

1.1 Motor

1. TIM3→CCR4 ⇒ PE5 (FL) (C) (PWM)
   - Prescale = 170-1
   - ARR = 10000-1
2. TIM2→CCR1 ⇒ (RL) (D) (PWM)
   - Prescale = 170-1
   - ARR = 10000-1
3. TIM2→CCR1 ⇒ (FR) (B) (PWM)
   - Prescale = 170-1
   - ARR = 10000-1
4. TIM2→CCR2 ⇒ (RR) (A) (PWM)
   - Prescale = 170-1
   - ARR = 10000-1

1.2 Encoder

1. TIM1 ⇒ FL encoder (TIMER)
   - Prescale = 1-1
   - ARR = 65535
2. TIM5 ⇒ RL encoder (TIMER)
   - Prescale = 1-1
   - ARR = 65535
3. TIM8 ⇒ FR encoder (TIMER)
   - Prescale = 1-1
   - ARR = 65535
4. TIM4 ⇒ RR encoder (TIMER)

- Prescale = 1-1
- ARR = 65535

1.3 External TB6612 Module (for right motor)

1. EN_L ⇒ 3.3V / 5V (shorted)
2. C_IN1 ⇒ PB0 (GPIO)
    - GPIO Output
    - Pull Down
3. C_IN2 ⇒ PE6 (GPIO)
    - GPIO Output
    - Pull Down
4. D_IN1 ⇒ PD7 (GPIO)
    - GPIO Output
    - Pull Down
5. D_IN2 ⇒ PB3 (GPIO)
    - GPIO Output
    - Pull Down

1.4 External TB6612 Module (for left motor)

1. EN_R ⇒ 3.3V / 5V (shorted)
2. A_IN1 ⇒ PA15 (GPIO)
    - GPIO Output
    - Pull Down
3. A_IN2 ⇒ PB7 (GPIO)
    - GPIO Output
    - Pull Down
4. B_IN1 ⇒ PD2 (GPIO)
    - GPIO Output
    - Pull Down
5. B_IN2 ⇒ PC12 (GPIO)
    - GPIO Output
    - Pull Down

1.5 Fan

1. TIM3→CCR3 ⇒ PE4 (PWM)
    - Prescale = 170-1
    - ARR = 10000-1

1.6 Hiwonder Board

1. UART4_TX ⇒ PC10 (UART)
    - 9600 Bits/s
2. UART4_RX ⇒ PC11 (UART)
    - 9600 Bits/s

1.7 Remote Controller

1. UART1_TX ⇒ PC4 (UART)
    - 115200 Bits/s
2. UART1_RX ⇒ PC5 (UART)
    - 115200 Bits/s

2 Jason's Car without Fan

2.1 Motor

1. TIM3→CCR4 ⇒ PE5 (FL) (C) (PWM)
    - Prescale = 1-1
    - ARR = 16800-1
2. TIM2→CCR4 ⇒ PD6 (RL) (D) (PWM)
    - Prescale = 1-1
    - ARR = 16800-1
3. TIM3→CCR2 ⇒ PE3 (FR) (B) (PWM)
    - Prescale = 1-1
    - ARR = 16800-1
4. TIM3→CCR1 ⇒ PE2 (RR) (A) (PWM)
    - Prescale = 1-1
    - ARR = 16800-1

2.2 Encoder

1. TIM1 ⇒ FL encoder (TIMER)
    - Prescale = 1-1
    - ARR = 65535
2. TIM5 ⇒ RL encoder (TIMER)
    - Prescale = 1-1
    - ARR = 65535
3. TIM8 ⇒ FR encoder (TIMER)
    - Prescale = 1-1
    - ARR = 65535
4. TIM4 ⇒ RR encoder (TIMER)
    - Prescale = 1-1
    - ARR = 65535

2.3 External TB6612 Module (for right motor)

1. EN_L ⇒ 3.3V / 5V (shorted)
2. C_IN1 ⇒ PB0 (GPIO)
    - GPIO Output
    - Pull Down
3. C_IN2 ⇒ PE6 (GPIO)
    - GPIO Output
    - Pull Down
4. D_IN1 ⇒ PD7 (GPIO)
    - GPIO Output
    - Pull Down
5. D_IN2 ⇒ PB3 (GPIO)
    - GPIO Output
    - Pull Down

2.4 External TB6612 Module (for left motor)

1. EN_R ⇒ 3.3V / 5V (shorted)
2. A_IN1 ⇒ PA15 (GPIO)
    - GPIO Output

- Pull Down

3. A_IN2 ⇒ PB7 (GPIO)
   - GPIO Output
   - Pull Down
4. B_IN1 ⇒ PD2 (GPIO)
   - GPIO Output
   - Pull Down
5. B_IN2 ⇒ PC12 (GPIO)
   - GPIO Output
   - Pull Down

2.5 Hiwonder Board

1. UART4_TX ⇒ PC10 (UART)
   - 9600 Bits/siga
2. UART4_RX ⇒ PC11 (UART)
   - 9600 Bits/s

2.6 Remote Controller

1. UART1_TX ⇒ PC4 (UART)
   - 115200 Bits/s
2. UART1_RX ⇒ PC5 (UART)
   - 115200 Bits/s

3 Tommy's Car

3.1 Motor

1. TIM3→CCR4 ⇒ PE5 (FL) (C) (PWM)
   latitudes
   - Prescale = 1-1
   - ARR = 65535
2. TIM2→CCR4 ⇒ PE3 (RL) (D) (PWM)
   - Prescale = 1-1
   - ARR = 65535
3. TIM3→CCR1 ⇒ PE2 (FR) (B) (PWM)

- Prescale = 1-1
- ARR = 65535

4. TIM3→CCR2 ⇒ PD7 (RR) (A) (PWM)
   - Prescale = 1-1
   - ARR = 65535

3.2 Encoder

1. TIM1 ⇒ FL encoder (TIMER)
   - Prescale = 1-1
   - ARR = 65535
2. TIM5 ⇒ RL encoder (TIMER)
   - Prescale = 1-1
   - ARR = 65535
3. TIM8 ⇒ FR encoder (TIMER)
   - Prescale = 1-1
   - ARR = 65535
4. TIM4 ⇒ RR encoder (TIMER)
   - Prescale = 1-1
   - ARR = 65535

3.3 External TB6612 Module (for left motor)

1. EN_L ⇒ 3.3V / 5V (shorted)
2. C_IN1 ⇒ PB14 (GPIO)
   - GPIO Output
   - Pull Down
3. C_IN2 ⇒ PB15 (GPIO)
   - GPIO Output
   - Pull Down
4. D_IN1 ⇒ PE6 (GPIO)
   - GPIO Output
   - Pull Down
5. D_IN2 ⇒ PD8 (GPIO)
   - GPIO Output

- Pull Down

3.4 External TB6612 Module (for right motor)

1. EN_R ⇒ 3.3V / 5V (shorted)
2. A_IN1 ⇒ PE11 (GPIO)
    - GPIO Output
    - Pull Down
3. A_IN2 ⇒ PE12 (GPIO)
    - GPIO Output
    - Pull Down
4. B_IN1 ⇒ PB10 (GPIO)
    - GPIO Output
    - Pull Down
5. B_IN2 ⇒ PE13 (GPIO)
    - GPIO Output
    - Pull Down

3.5 Linear Actuator

1. LINEAR_ACT_1_1 ⇒ PC10 (GPIO)
    - GPIO Output
    - Pull Down
2. LINEAR_ACT_1_2 ⇒ PF2 (GPIO)
    - GPIO Output
    - Pull Down
3. LINEAR_ACT_2_1 ⇒ PF9 (GPIO)
    - GPIO Output
    - Pull Down
4. LINEAR_ACT_2_2 ⇒ PE14 (GPIO)
    - GPIO Output
    - Pull Down

3.6 Remote Controller

1. UART1_TX ⇒ PC4 (UART)
    - 115200 Bits/s

2. UART1_RX ⇒ PC5 (UART)
    - 115200 Bits/s

4 Kitty's Car

4.1 Motor

1. TIM3→CCR2 ⇒ PE3 (FL) (PWM)
    - Prescale = 15-1
    - ARR = 65535-1
2. TIM2→CCR1 ⇒ PD3 (RL) (PWM)
    - Prescale = 15-1
    - ARR = 65535-1
3. TIM3→CCR1 ⇒ PE2 (FR) (PWM)
    - Prescale = 15-1
    - ARR = 65535-1
4. TIM2→CCR2 ⇒ PD4 (RR) (PWM)
    - Prescale = 15-1
    - ARR = 65535-1

4.2 Encoder

1. TIM1 ⇒ FL encoder (TIMER)
    - Prescale = 1-1
    - ARR = 65535
2. TIM5 ⇒ RL encoder (TIMER)
    - Prescale = 1-1
    - ARR = 65535
3. TIM8 ⇒ FR encoder (TIMER)
    - Prescale = 1-1
    - ARR = 65535
4. TIM4 ⇒ RR encoder (TIMER)
    - Prescale = 1-1
    - ARR = 65535

4.3 TB6612 (for left motor)

1. MOTOR_LEFT_ENABLE ⇒ PC3 (GPIO)
    - GPIO Output
    - Pull Down
2. MOTOR_FL_IN1 ⇒ PA5 (GPIO)
    - GPIO Output
    - Pull Down
3. MOTOR_FL_IN2 ⇒ PA4 (GPIO)

    DelphiGPIO Output Pull Down
4. MOTOR_RL_IN1 ⇒ PA6 (GPIO)
    - GPIO Output
    - Pull Down
5. MOTOR_RL_IN2 ⇒ PA7 (GPIO)
    - GPIO Output
    - Pull Down

4.4 TB6612 (for right motor)

1. MOTOR_RIGHT_ENABLE ⇒ PD15 (GPIO)
    - GPIO Output
    - Pull Down
2. MOTOR_FR_IN1 ⇒ PA10 (GPIO)
    - GPIO Output
    - Pull Down
3. MOTOR_FR_IN2 ⇒ PA11 (GPIO)
    - GPIO Output
    - Pull Down
4. MOTOR_RR_IN1 ⇒ PA9 (GPIO)
    - GPIO Output
    - Pull Down
5. MOTOR_RR_IN2 ⇒ PA8 (GPIO)
    - GPIO Output
    - Pull Down

4.5 Stepper Motor

1. TIM3→CCR4 ⇒ PE5 (PWM)
    - Prescale = 1-1
    - ARR = 65535
2. STEPPER_DIR_GPIO_Port ⇒ PE4 (GPIO)
    - GPIO Output
    - Pull Down

4.6 Servo Motor

1. TIM2→CCR4 ⇒ PD6 (Big Wheel’s Servo) (PWM)
    - Prescale = 1-1
    - ARR = 65535

4.7 Remote Controller

1. UART1_TX ⇒ PC4 (UART)
    - 115200 Bits/s
2. UART1_RX ⇒ PC5 (UART)
    - 115200 Bits/s