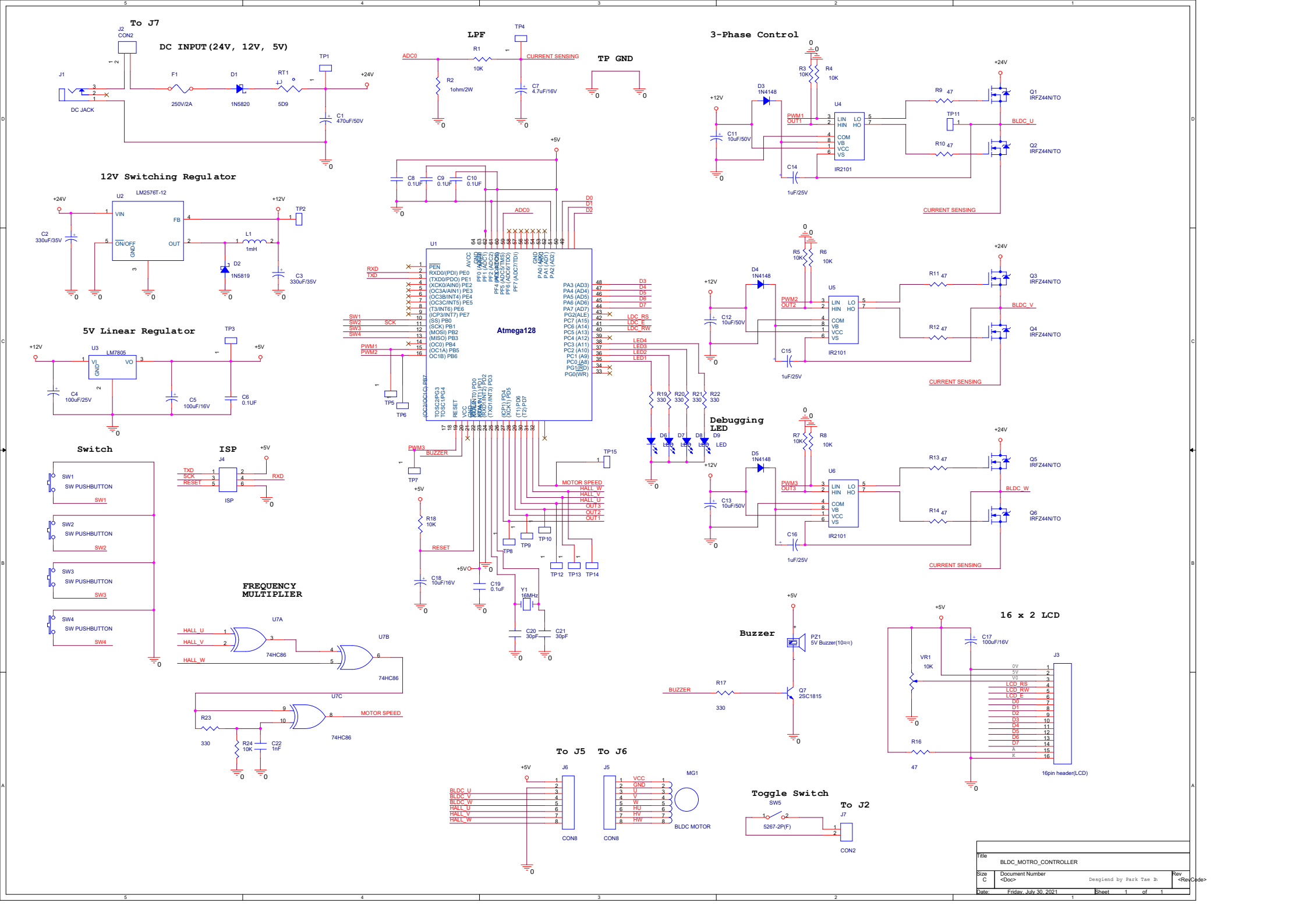
To J7
DC INPUT(24V, 12V, 5V)
J2 CON2
J1 DC JACK
F1 250V/2A
D1 1N5820
RT1 5D9
TP1
+24V
C1 470uF/50V
LPF
ADC0
R1 10K
R2 1ohm/2W
TP4
CURRENT SENSING
C7 4.7uF/16V
TP GND
3-Phase Control
R3 10K
R4 10K
D3 1N4148
+12V
C11 10uF/50V
U4
PWM1
OUT1
LIN HIN LO HO
COM VB VCC VS
IR2101
C14 1uF/25V
R9 47
R10 47
TP11
Q1 IRFZ44N/TO
Q2 IRFZ44N/TO
BLDC_U
CURRENT SENSING
12V Switching Regulator
U2 LM2576T-12
VIN FB ON/OFF OUT GND
C2 330uF/35V
L1 1mH
D2 1N5819
C3 330uF/35V
TP2
+12V
C8 0.1UF
C9 0.1UF
C10 0.1UF
+5V
U1
Atmega128
PEN
RXD0/(PDI) PE0
(TXD0/PDO) PE1
(XCK0/AIN0) PE2
(OC3A/AIN1) PE3
(OC3B/INT4) PE4
(OC3C/INT5) PE5
(T3/INT6) PE6
(ICP3/INT7) PE7
(SS) PB0
(SCK) PB1
(MOSI) PB2
(MISO) PB3
(OC0) PB4
(OC1A) PB5
OC1B) PB6
(OC2/OC1C) PB7
TOSC2/PG3
TOSC1/PG4
RESET
VCC
GND
XTAL2
XTAL1
(RXD1/INT0) PD2
(TXD1/INT1) PD3
(ICP1) PD4
(XCK1) PD5
(T1) PD6
(T2) PD7
PA3 (AD3)
PA4 (AD4)
PA5 (AD5)
PA6 (AD6)
PA7 (AD7)
PG2(ALE)
PC7 (A15)
PC6 (A14)
PC5 (A13)
PC4 (A12)
PC3 (A11)
PC2 (A10)
PC1 (A9)
PC0 (A8)
PG1(RD)
PG0(WR)
RXD
TXD
SW1
SW2
SW3
SW4
SCK
PWM1
PWM2
PWM3
BUZZER
MOTOR SPEED
HALL_W
HALL_V
HALL_U
OUT3
OUT2
OUT1
LDC_RS
LDC_E
LDC_RW
LED4
LED3
LED2
LED1
D0
D1
D2
D3
D4
D5
D6
D7
TP5
TP6
TP7
TP8
TP9
TP10
TP12
TP13
TP14
TP15
R19 330
R20 330
R21 330
R22 330
D6 LED
D7 LED
D8 LED
D9 LED
5V Linear Regulator
U3 LM7805
VI GND VO
C4 100uF/25V
C5 100uF/16V
C6 0.1UF
TP3
Debugging LED
R5 10K
R6 10K
D4 1N4148
U5
PWM2
OUT2
C12 10uF/50V
C15 1uF/25V
R11 47
R12 47
Q3 IRFZ44N/TO
Q4 IRFZ44N/TO
BLDC_V
R7 10K
R8 10K
D5 1N4148
U6
PWM3
OUT3
C13 10uF/50V
C16 1uF/25V
R13 47
R14 47
Q5 IRFZ44N/TO
Q6 IRFZ44N/TO
BLDC_W
Switch
SW1 SW PUSHBUTTON
SW2 SW PUSHBUTTON
SW3 SW PUSHBUTTON
SW4 SW PUSHBUTTON
ISP
J4
TXD
SCK
RESET
RXD
R18 10K
C18 10uF/16V
C19 0.1uF
Y1 16MHz
C20 30pF
C21 30pF
FREQUENCY MULTIPLIER
U7A
HALL_U
HALL_V
HALL_W
74HC86
U7B
U7C
R23 330
R24 10K
C22 1nF
MOTOR SPEED
Buzzer
PZ1 5V Buzzer(10mA)
R17 330
Q7 2SC1815
16 x 2 LCD
C17 100uF/16V
VR1 10K
R16 47
J3
0V
5V
V0
LCD_RS
LCD_RW
LCD_E
D0
D1
D2
D3
D4
D5
D6
D7
A
K
16pin header(LCD)
To J5
To J6
J6 CON8
J5 CON8
VCC
GND
U
V
W
HU
HV
HW
MG1
BLDC MOTOR
Toggle Switch
SW5 5267-2P(F)
To J2
J7 CON2
Title
BLDC_MOTRO_CONTROLLER
Size C
Document Number
<Doc>
Desgiend by Park Tae Ih
Rev
<RevCode>
Date: Friday, July 30, 2021
Sheet 1 of 1