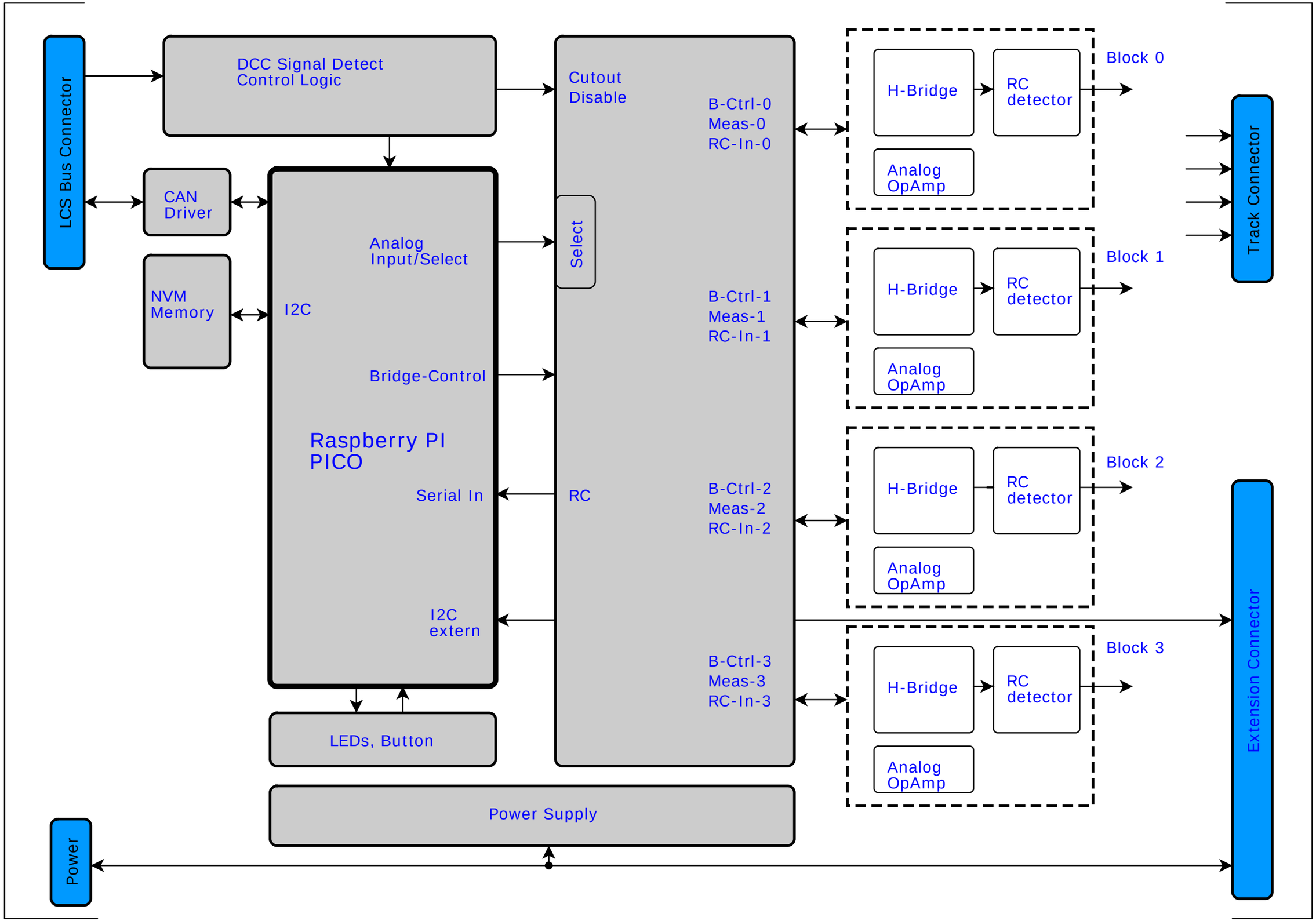
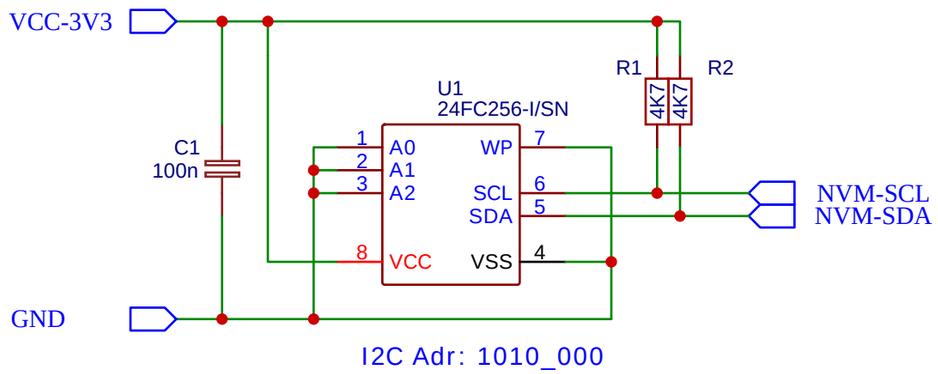
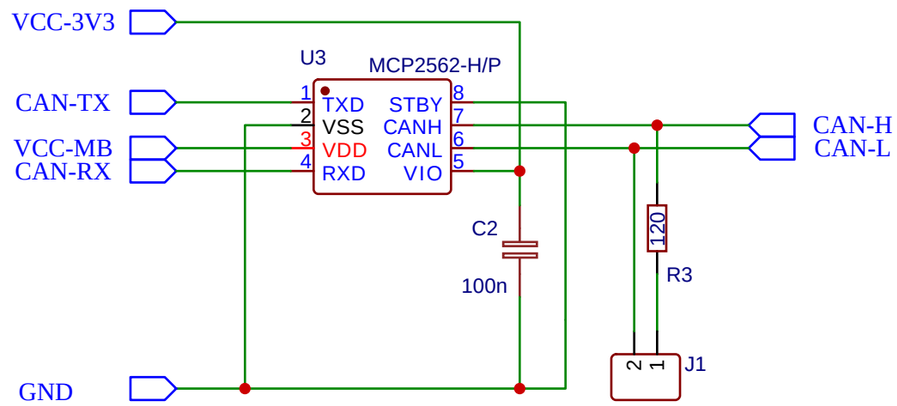

LCS Bus Connector
DCC Signal Detect
Control Logic
CAN
Driver
NVM
Memory
Analog
Input/Select
I2C
Bridge-Control
Raspberry PI
PICO
Serial In
I2C
extern
LEDs, Button
Cutout
Disable
Select
RC
B-Ctrl-0
Meas-0
RC-In-0
B-Ctrl-1
Meas-1
RC-In-1
B-Ctrl-2
Meas-2
RC-In-2
B-Ctrl-3
Meas-3
RC-In-3
H-Bridge
RC
detector
Analog
OpAmp
Block 0
Block 1
Block 2
Block 3
Track Connector
Extension Connector
Power Supply
Power

Non-Volatile Memory

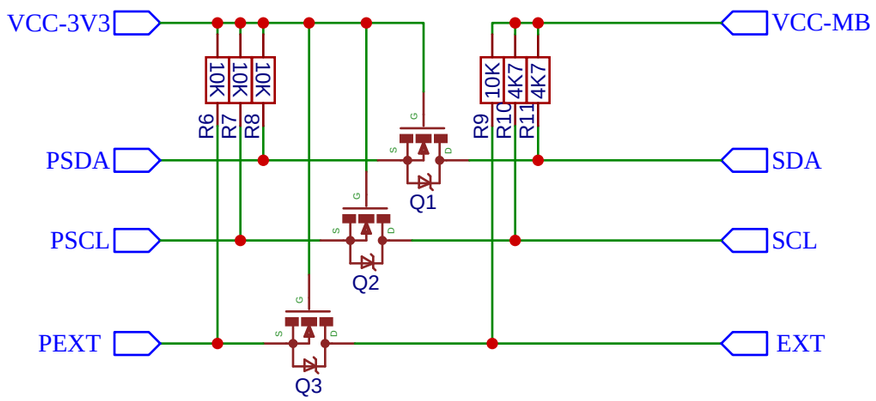


I2C Adr: 1010_000

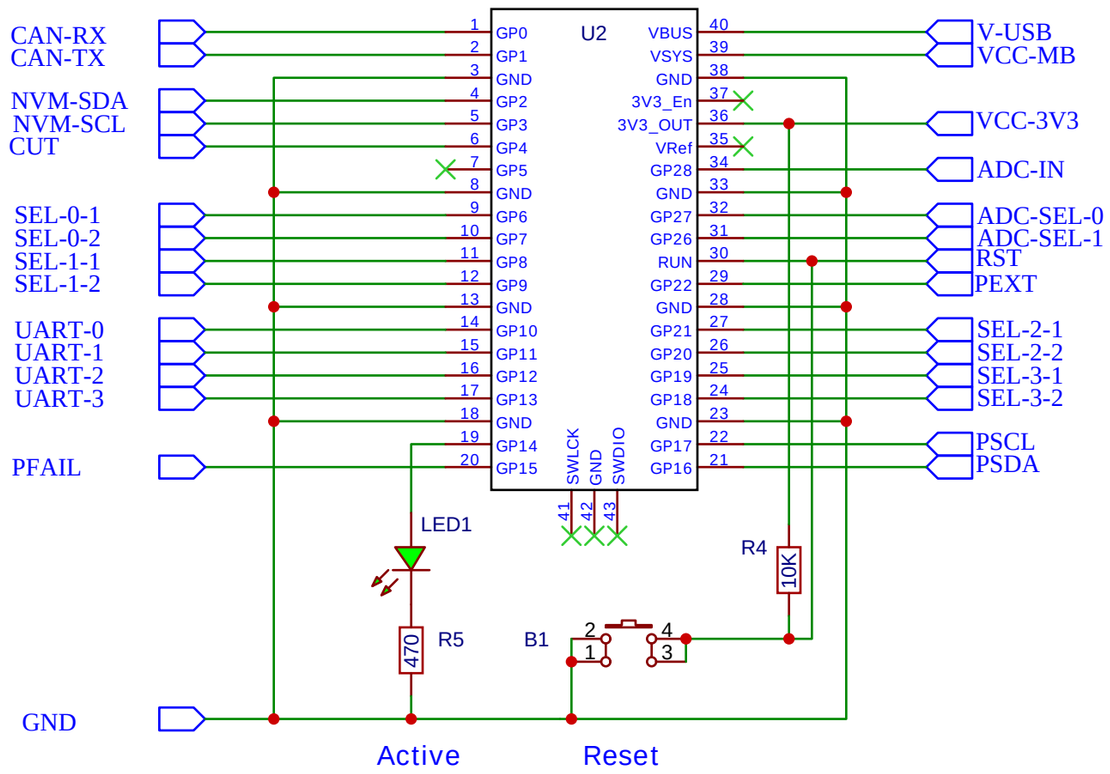
CAN Bus Line Driver

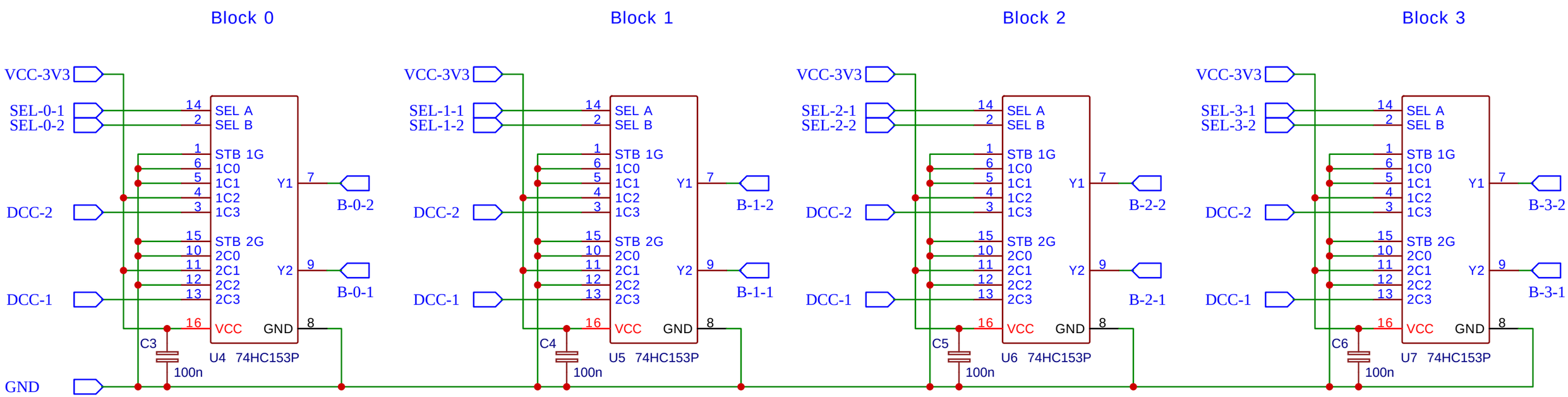


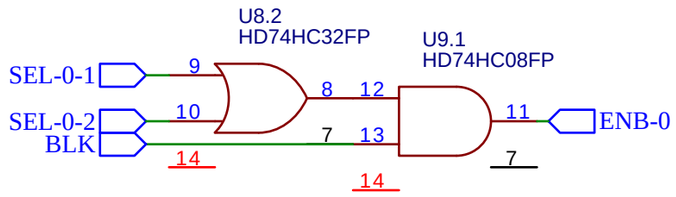
Level shifters

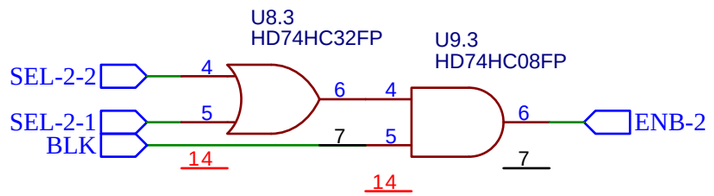


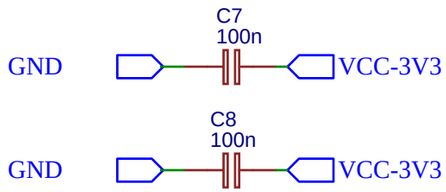
Main Controller - RASPBERRY Pi Pico

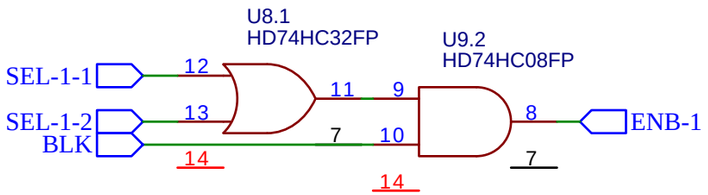


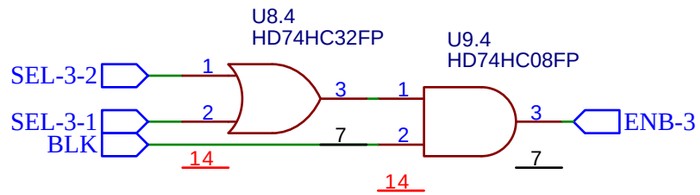












Control Logic Signals:

Sel-2	Sel-1	->	B-x-1	B-x-2	ENB-x	STATE
0	0	->	GND	GND	GND	"Z"
0	1	->	VCC	GND	PWM/BLK	"FWD"
1	0	->	GND	VCC	PWM/BLK	"REV"
1	1	->	DCC1	DCC2	DCC/BLK	"DCC"

ENB == LOW -> Z

H-Bridges

Block 1

VS

C9 33n

U10 L6205PD

1	GND	SLUG	21
2	VSA	GND	20
3	OUT2A	VSB	19
4	VCP	OUT2B	18
5	ENA	VBOOT	17
6	IN1A	ENB	16
7	IN2A	IN2B	15
8	SENSEA	IN1B	14
9	OUT1A	SENSEB	13
10	GND	OUT1B	12
		GND	11

BO-1-1
ENB-1
B-1-2
B-1-1
S-1
BO-1-2

R12 10k
R14 10k

D3 3.3V
C11 220n
C12 1n
C13 100n
R16 0R47

GND

Block 2

D1 BAT47
D2 BAT47
C10 100n

R13 10k
R15 10k

R17 0R47
C14 100u
C15 1n
C16 220n
D4 3.3V

BO-2-1
VBOOT
ENB-2
B-2-1
B-2-2
S-2
BO-2-2

GND

ADC-Multiplexer

VCC-3V3

U11 CD4051BM/TR

1	Y4	VDD	16
2	Y6	Y2	15
3	Z	Y1	14
4	Y7	Y0	13
5	Y5	Y3	12
6	E#	A0	11
7	VEE	A1	10
8	VSS	A2	9

ADC-IN
100n C17
GND

S-2
S-1
S-0
S-3
ADC-SEL-0
ADC-SEL-1

VS

Block 0

U12 L6205PD

1	GND	SLUG	21
2	VSA	GND	20
3	OUT2A	VSB	19
4	VCP	OUT2B	18
5	ENA	VBOOT	17
6	IN1A	ENB	16
7	IN2A	IN2B	15
8	SENSEA	IN1B	14
9	OUT1A	SENSEB	13
10	GND	OUT1B	12
		GND	11

BO-0-1
ENB-0
B-0-2
B-0-1
S-0
BO-0-2

R18 10k
R20 10k

D5 3.3V
C19 220n
C20 1n
C21 100n
R22 0R47

GND

Block 3

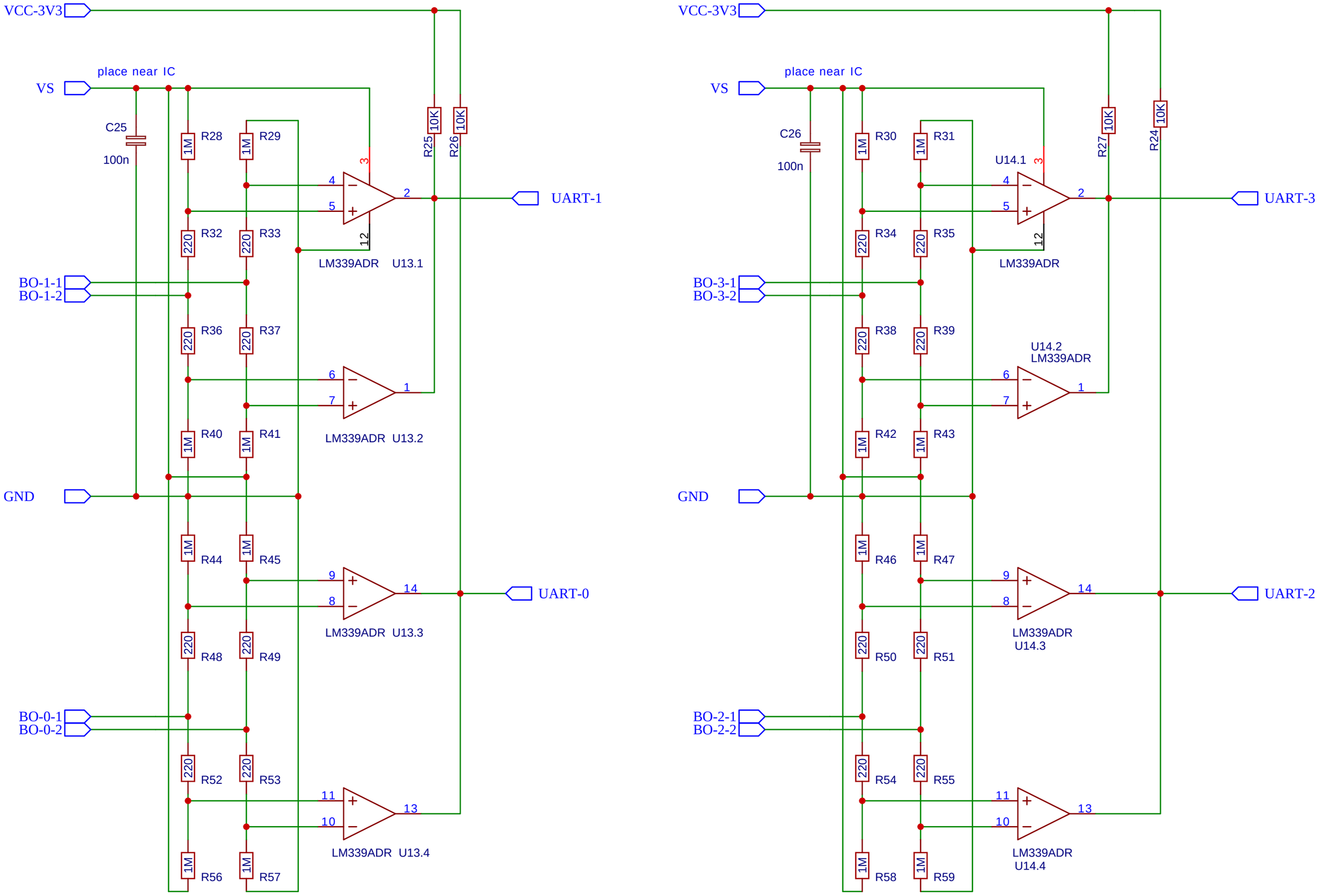
C18 100n

R19 10k
R21 10k

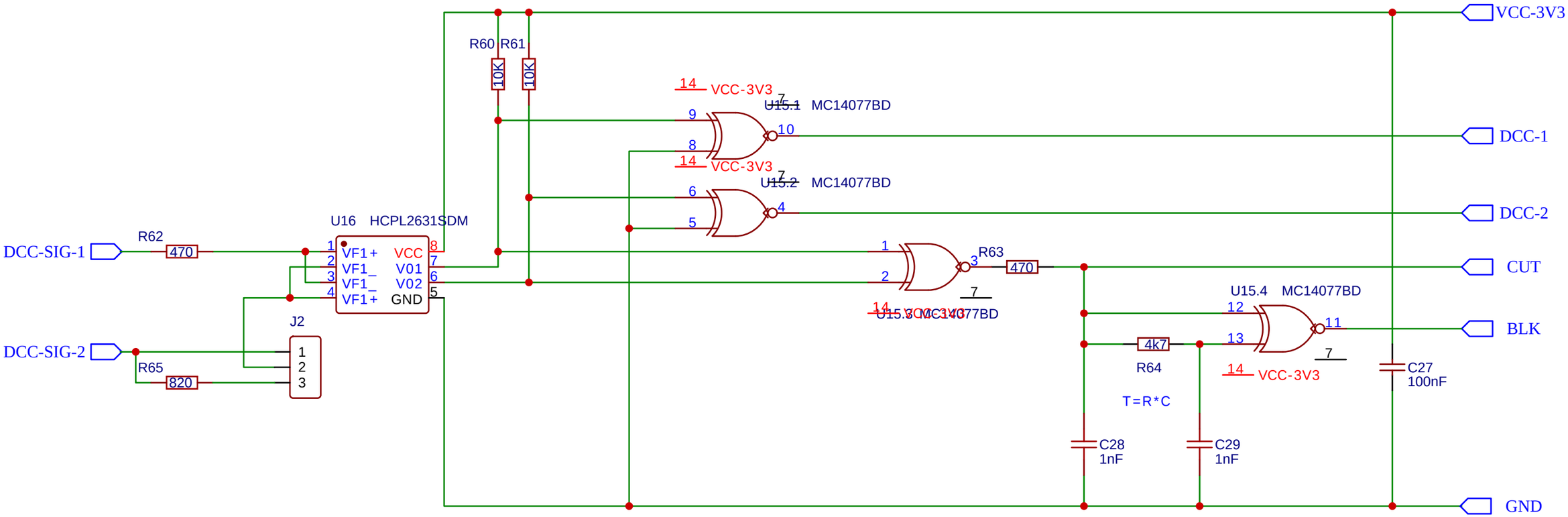
R23 0R47
C22 100u
C23 1n
C24 220n
D6 3.3V

BO-3-1
VBOOT
ENB-3
B-3-1
B-3-2
S-3
BO-3-2

GND


VCC-3V3
VS
place near IC
C25
100n
R28
R29
R25
R26
10K
10K
R32
R33
R36
R37
R40
R41
R44
R45
R48
R49
R52
R53
R56
R57
1M
220
U13.1
LM339ADR
U13.2
LM339ADR
U13.3
LM339ADR
U13.4
LM339ADR
BO-1-1
BO-1-2
BO-0-1
BO-0-2
GND
UART-1
UART-0
VCC-3V3
VS
place near IC
C26
100n
R30
R31
R27
R24
10K
10K
R34
R35
R38
R39
R42
R43
R46
R47
R50
R51
R54
R55
R58
R59
1M
220
U14.1
LM339ADR
U14.2
LM339ADR
U14.3
LM339ADR
U14.4
LM339ADR
BO-3-1
BO-3-2
BO-2-1
BO-2-2
GND
UART-3
UART-2

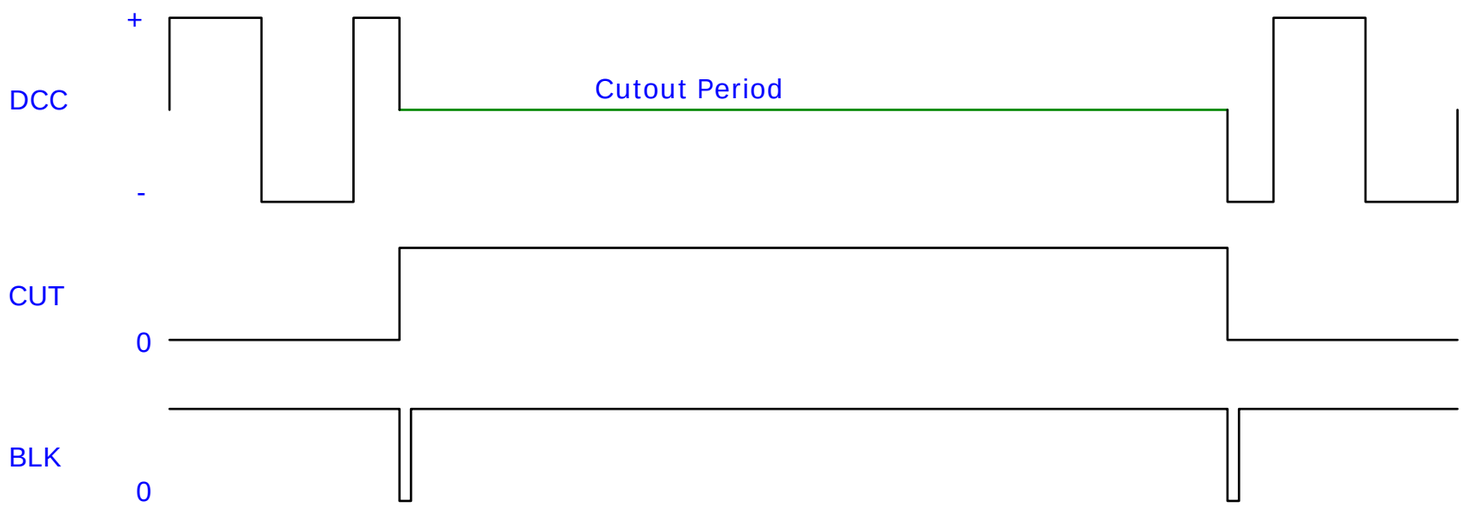
LCS Bus - DCC Signal Input



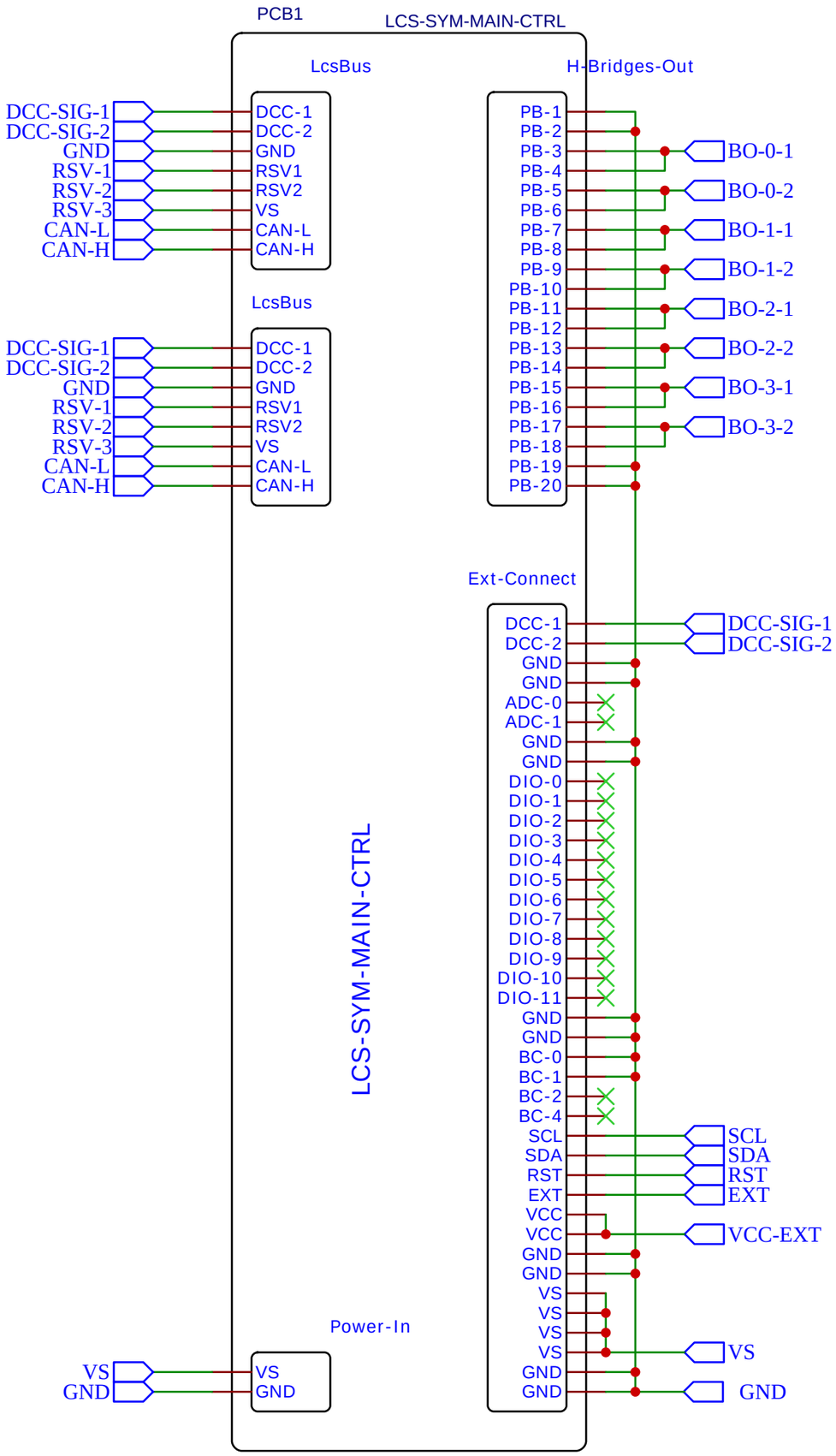
DCC Signal, Cutout and Block Signal.

DCC Input:

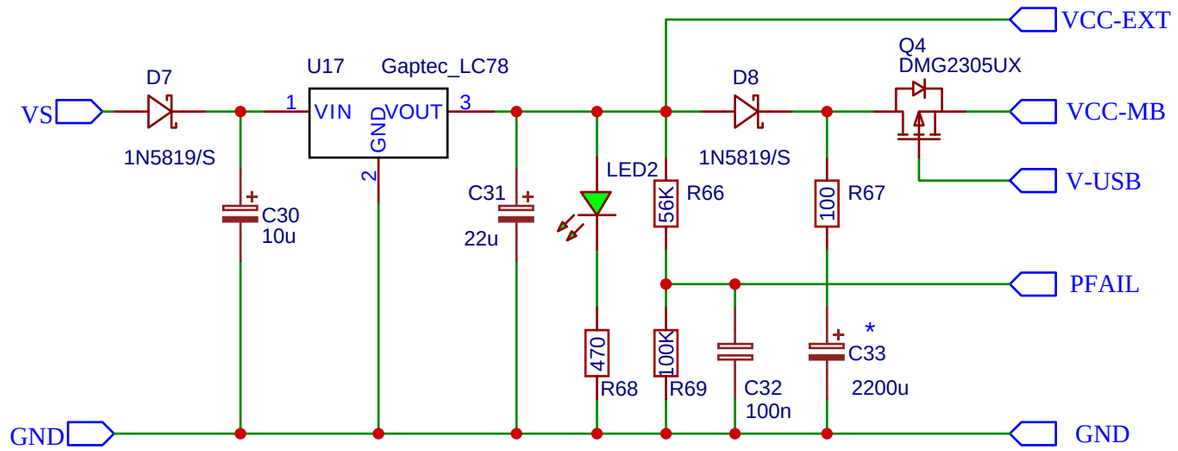
00->CUTOUT
01->DCC+
10->DCC-



Block Controller PCB connectors



Power Supply with Powerfail Option



* optional, only for PFAIL option