SFERA LABS SRL - IONO PI MAX V.2.0 BLOCK DIAGRAM R.23 - 28 NOV 2023 - COPYRIGHT 2019-2023 SFERA LABS SRL ITALY ALL RIGHTS RESERVED

SDA

SDB

CB12/CB34/CB56
NC1-6
EN
COM1-6
VU10
NO1-6
Data Switch
MAX4996
3V3_P

CB12/CB34/CB56
NC1-6
EN
COM1-6
VU9
NO1-6
Data Switch
MAX4996
3V3_P

5V USB2 (TOP)
5V USB1 (BOTTOM)
Dual USB Ethernet Connector
On-board USB Connector
USB Hub 10/100 Eth Controller
LAN9514
BU20
3V3_P
MCU_USB_M

USB POWER SWITCH
USB2_FAULT_P
USB2_EN_P
USB1_FAULT_P
USB1_EN_P

5V_P
3V3_P
1V8_P

GPIO1
GPIO31
GPIO0
GPIO30
SDX
SD1 (GPIO22-27)
USB
SPI0 (GPIO8-11; INT:GPIO28)
GPIO42
GPIO15 / UART_RX
GPIO14 / UART_TX)
SDA1/SCL1 (GPIO2-3)

GPIO18
GPIO32
GPIO17
GPIO39
GPIO47
GPIO38
GPIO40
GPIO33
GPIO37
GPIO6
RUN
GPIO16
GPIO19
GPIO20
GPIO21
GPIO29
GPIO34
GPIO35
GPIO36
GPIO43
GPIO44
GPIO45
GPIO41

Raspberry Pi Compute Module
VU4

SHDN_EN_M
WD_HB_M
WD_TO_M
WD_EN_M
EMMC_EN_M
P1_M
BUZZER_M
MCU_CONF_TX_M
MCU_CONF_RX_M
SDA/B_STATUS_M
PI_RUN_M
DI1_P
DI2_P
DI3_P
DI4_P
DT1_P
DT2_P
DT3_P
DT4_P

3V3_P

SD1_EN_M
SDA/B_SW_M
SDX_EN_M

SWO_M

SW_EN_P
3V3_M
RESET_M
SWCLK_M
SWDIO_M
INx
N1
N2
N3
Quad Switch
C1
C2
C3
TS3A4751
BU31
SW_M

SCK <
SI <
SO >
CS_N <
INT_N >
TXD
CAN FD Controller
MCP2518FD
RXD
VU2
3V3_P
CAN_RX_P
CAN_TX_P

COM IN
Switch
NC
NO
TS3A5223
BU27
232_IN_M
232_M
232_RX_TX

COM IN
Switch
NC
NO
TS3A5223
BU26
3V3_M
485_IN_M
485_M
485_RX_TX

COM IN
Switch
NC
NO
TS3A5223
VU1
I2C_IN_M
PI_I2C_M
DMZ_I2C_M

Real Time Clock Calendar
PCF2131TFY
VU6

Secure Element
ATECC608A
VU3

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3V3_M
MCP131
T-270
BU29
R
SW_M

485_RX_TX
232_RX_TX
485_M
485_IN_M
232_M
232_IN_M
ADC_PWR_EN_M
PI_I2C_M
DMZ_I2C_M
I2C_IN_M
PWR_LED_M
CAN_TX_P
CAN_RX_P

5V ISO
Isolated RS-485
Transceiver
ISO1410
BU36
B
A
R
D
RE
DE
TXE
485B
485A
SG
232RX
232TX

5V ISO
TXD
CANH
CAN FD Transceiver
CANL
MCP2558FD
BU34
RXD
CANH
CANL
SG

16K EERAM
SDA 47L16
SCL
BU39

RS-232
Transceiver
MAX3227E
BU33
R
T

MCU
ATSAME54P20A
BU30
RESET
SWO
SWDCLK
SWDIO
PD00
PD08
PD01
PD09
PA20
PA10
PA24
PA25
PB00
PB01
PB02
PB05
PB03
PA11
PC28
PA00
PB19
PA19
PA06
PA12

CS_ADC_M
SCLK_ADC_M
DIN_ADC_M
DOUT_ADC_M
CS_REL_M
SCLK_REL_M
DIN_REL_M
DOUT_REL_M
FLAG_REL_M
RESET_REL_M
PDCD_REL_M
SPLD_REL_M
USB_EN_M
VOUT_V_M
MCU_USB_M
VBAT_V_M
VBAT_I_M
VIN_V_M
VBAT_ON_M
VIN_I_M
VOUT_I_M
SHDN_M
CHG_EN_M
COMM_EN_M
PI_EN_M
VOUT_EN_M

RGB LED 1
RGB LED 2
RGB LED 3
RGB LED 4
RGB LED 5
R
G
B
RGB LED
Driver
LP5018
OUT0
OUT1
OUT2
OUT3
OUT4
OUT5
OUT6
OUT7
OUT8
OUT9
OUT10
OUT11
OUT12
OUT13
OUT14
SDA
SCL
VU8

CP
D2 D0/D3 D1
FLIP FLOP
74HC175
VU14
Q3
Q2 Q0 Q1N

SD1_EN_M
SDX_EN_M
WD_HB_M
WD_EN_M
P1_M
MCU_CONF_TX_M
MCU_CONF_RX_M
DI2_M
DI4_M
DT2_M
DT4_M
AO1_EFCM_M
AO1_EFOT_M
AO2_EFCM_M
AO2_EFOT_M

SDA/B_STATUS_M
SDA/B_SW_M
SHDN_EN_M
WD_TO_M
EMMC_EN_M
BUZZER_M
DI1_M
DI3_M
DT1_M
DT3_M
AO1_DAC_M
AO1_EFLD_M
AO1_SEL_M
AO2_DAC_M
AO2_EFLD_M
AO2_SEL_M
PI_RUN_M

5V0_EN_M
5V0_FL_M
5VX_EN_M
5VX_FL_M
5VOUT / 5VEXP
POWER SWITCH

3V3_M
5V_EXP
SDA
SCL
EXT_I2C
SDAA/SCLA
VCCA
VCCB
SCLB
SDAB
I2C
Repeater
TCA9617B
EN
BU32
ACT
EXPANSION MODULES

Buzzer
Fan
5V
M
P1

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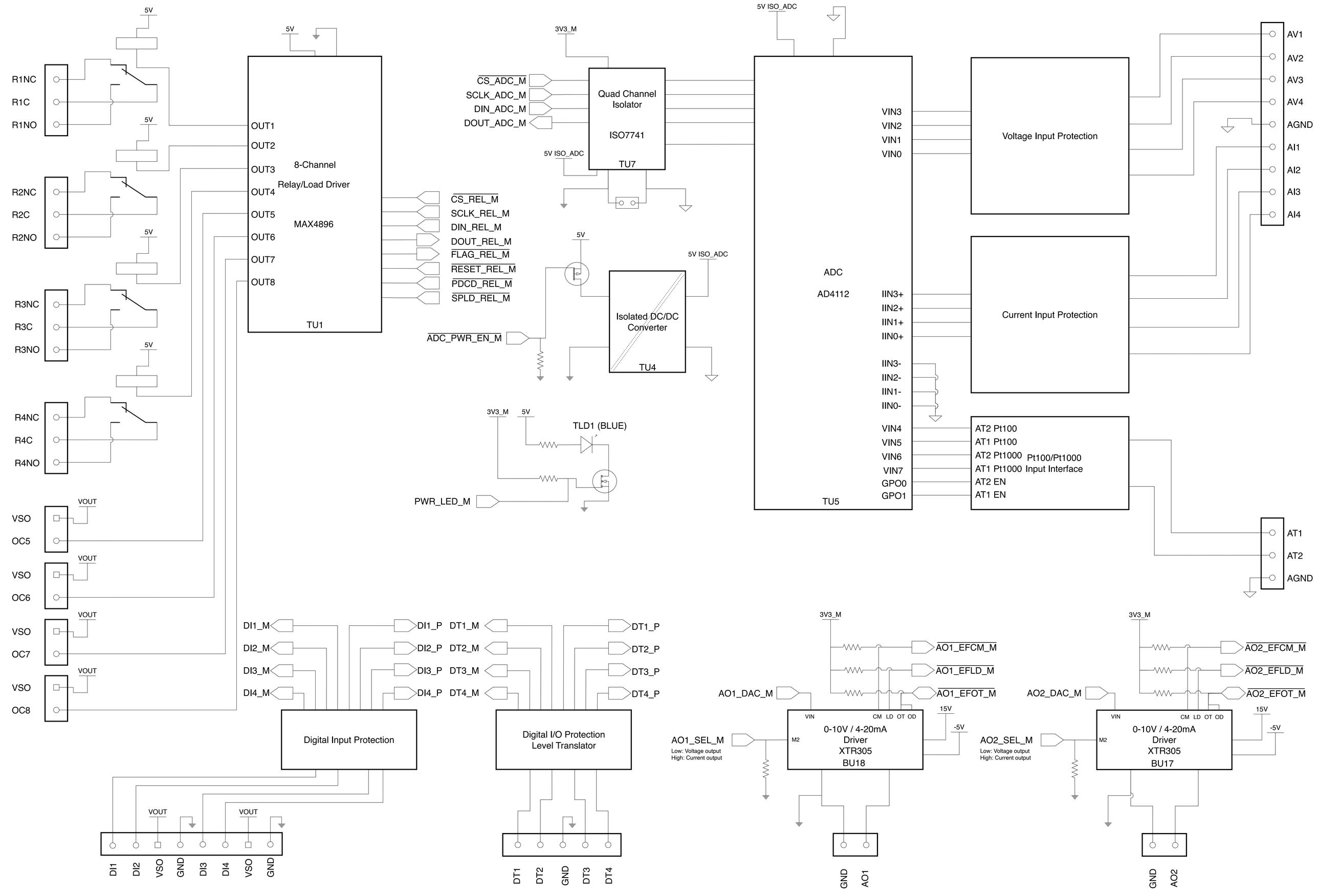
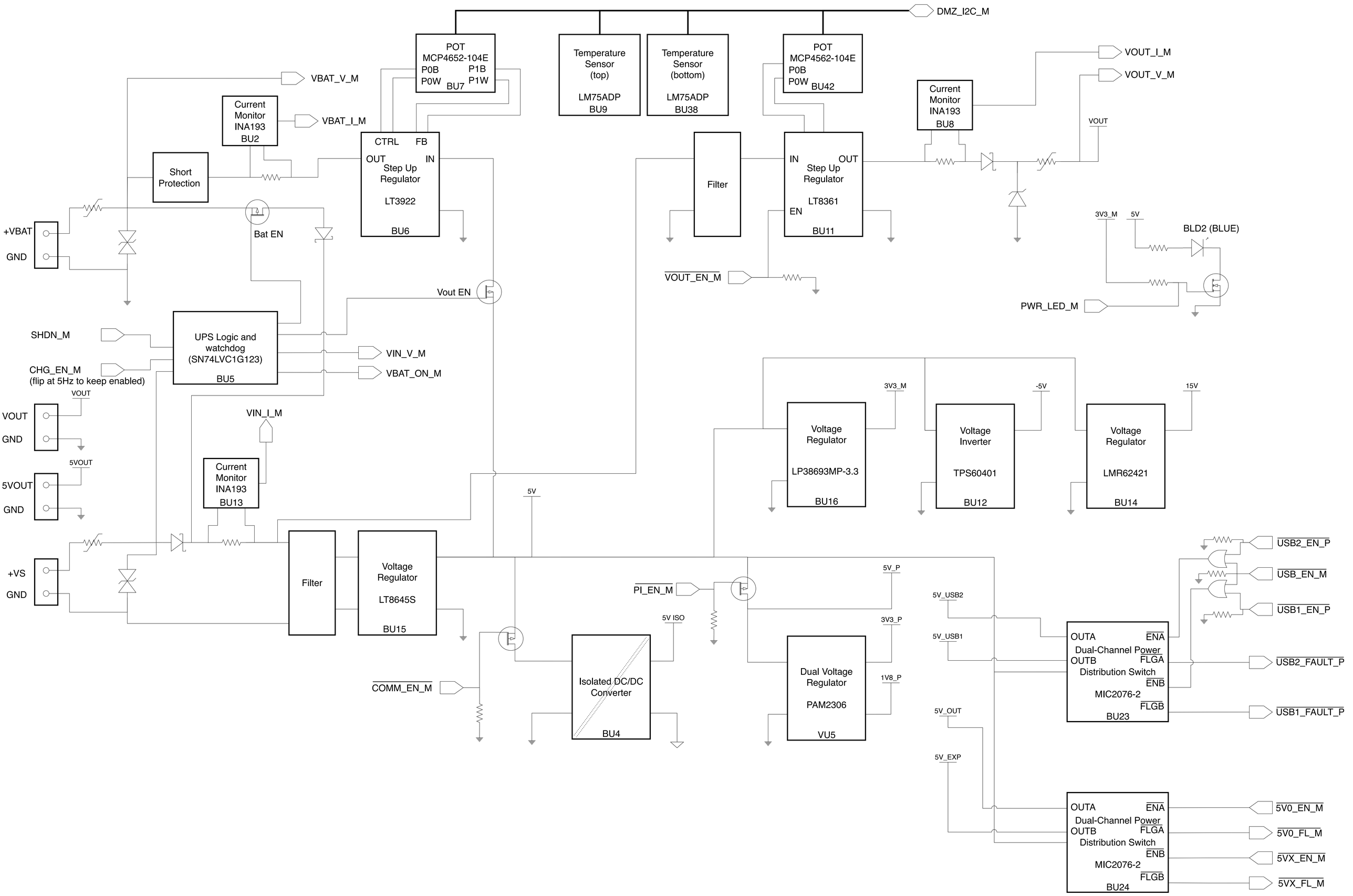
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