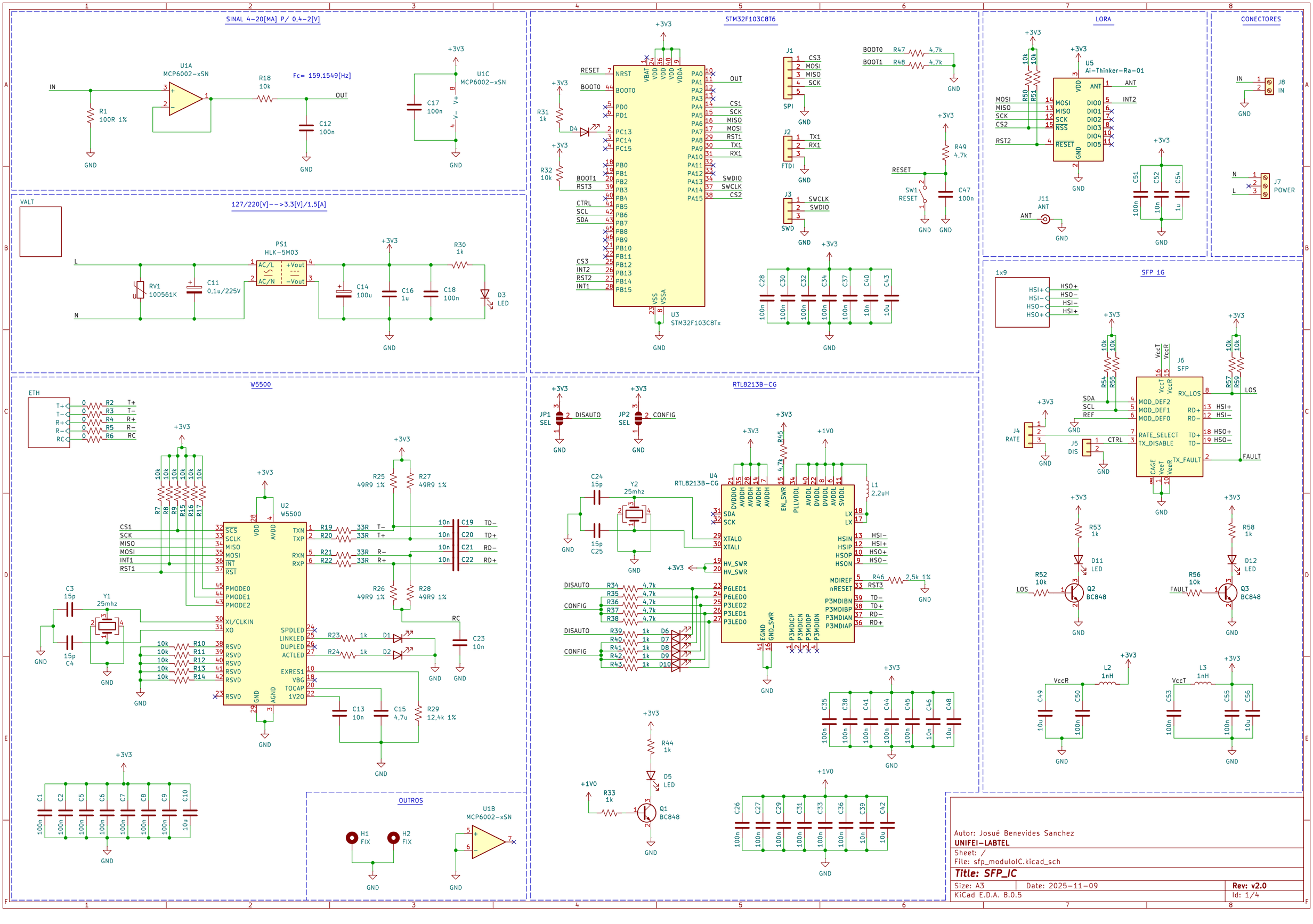
SINAL 4–20[MA] P/ 0,4–2[V]
U1A
MCP6002–xSN
IN
R1
100R 1%
GND
R18
10k
Fc= 159,1549[Hz]
OUT
C12
100n
GND
+3V3
U1C
MCP6002–xSN
C17
100n
GND
STM32F103C8T6
+3V3
RESET
BOOT0
R31
1k
D4
R32
10k
BOOT1
RST3
CTRL
SCL
SDA
CS3
INT2
RST2
INT1
NRST
BOOT0
PD0
PD1
PC13
PC14
PC15
PB0
PB1
PB2
PB3
PB4
PB5
PB6
PB7
PB8
PB9
PB10
PB11
PB12
PB13
PB14
PB15
VBAT
VDD
VDD
VDD
VDDA
VSS
VSSA
PA0
PA1
PA2
PA3
PA4
PA5
PA6
PA7
PA8
PA9
PA10
PA11
PA12
PA13
PA14
PA15
OUT
CS1
SCK
MISO
MOSI
RST1
TX1
RX1
SWDIO
SWCLK
CS2
U3
STM32F103C8Tx
GND
J1
SPI
J2
FTDI
J3
SWD
BOOT0
BOOT1
R47
R48
4,7k
RESET
SW1
R49
4,7k
C47
100n
C28
C30
C32
C34
C37
C40
C43
100n
10n
10u
LORA
U5
Ai–Thinker–Ra–01
10k
R50
R51
MOSI
MISO
SCK
CS2
RST2
ANT
INT2
DIO0
DIO1
DIO2
DIO3
DIO4
DIO5
J11
C51
C52
C54
100n
10n
1u
CONECTORES
J8
IN
J7
POWER
N
L
VALT
127/220[V]–>3,3[V]/1,5[A]
PS1
HLK–5M03
AC/L
AC/N
+Vout
–Vout
RV1
10D561K
C11
0,1u/225V
C14
100u
C16
1u
C18
100n
R30
1k
D3
LED
L
N
W5500
ETH
T+
T–
R+
R–
RC
R2
R3
R4
R5
R6
U2
W5500
CS1
SCK
MISO
MOSI
INT1
RST1
SCS
SCLK
MISO
MOSI
INT
RST
PMODE0
PMODE1
PMODE2
XI/CLKIN
XO
RSVD
SPDLED
LINKLED
DUPLED
ACTLED
EXRES1
VBG
TOCAP
1V20
TXN
TXP
RXN
RXP
R7
R8
R9
R15
R16
R17
R10
R11
R12
R13
R14
R19
R20
R21
R22
33R
R25
49R9 1%
R27
49R9 1%
R26
49R9 1%
R28
49R9 1%
C19
C20
C21
C22
TD–
TD+
RD–
RD+
C3
15p
Y1
25mhz
C4
15p
R23
R24
1k
D1
D2
RC
C23
10n
C13
10n
C15
4,7u
R29
12,4k 1%
C1
C2
C5
C6
C7
C8
C9
C10
100n
10u
OUTROS
H1
FIX
H2
FIX
U1B
MCP6002–xSN
RTL8213B–CG
JP1
SEL
DISAUTO
JP2
SEL
CONFIG
U4
RTL8213B–CG
DVDDIO
AVDDH
AVDDL
SVDDL
SDA
SCK
XTALO
XTALI
HV_SWR
P6LED1
P6LED0
P3LED2
P3LED1
P3LED0
EN_SWR
PLLVDDL
LX
HSIN
HSIP
HSOP
HSON
MDIREF
nRESET
P3MDIBN
P3MDIBP
P3MDIAN
P3MDIAP
EGND
GND_SWR
P3MDICP
P3MDICN
P3MDIDP
P3MDIDN
C24
15p
C25
15p
Y2
25mhz
L1
2,2uH
R46
2,5k 1%
R34
R35
R36
R37
R38
R39
R40
R41
R42
R43
D6
D7
D8
D9
D10
R44
1k
D5
LED
R33
1k
Q1
BC848
+1V0
C26
C27
C29
C31
C33
C36
C39
C42
C35
C38
C41
C44
C45
C46
C48
SFP 1G
1x9
HSI+
HSI–
HSO–
HSO+
J6
SFP
VccT
VccR
MOD_DEF2
MOD_DEF1
MOD_DEF0
RATE_SELECT
TX_DISABLE
RX_LOS
RD+
RD–
TD+
TD–
TX_FAULT
SDA
SCL
REF
LOS
FAULT
R54
R55
R57
R59
J4
RATE
J5
DIS
CTRL
R53
1k
D11
LED
R52
10k
Q2
BC848
R58
1k
D12
LED
R56
10k
Q3
BC848
L2
1nH
L3
1nH
C49
C50
C53
C55
C56
10u
100n
Autor: Josué Benevides Sanchez
UNIFEI–LABTEL
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Size: A3
Date: 2025–11–09
Rev: v2.0
KiCad E.D.A. 8.0.5
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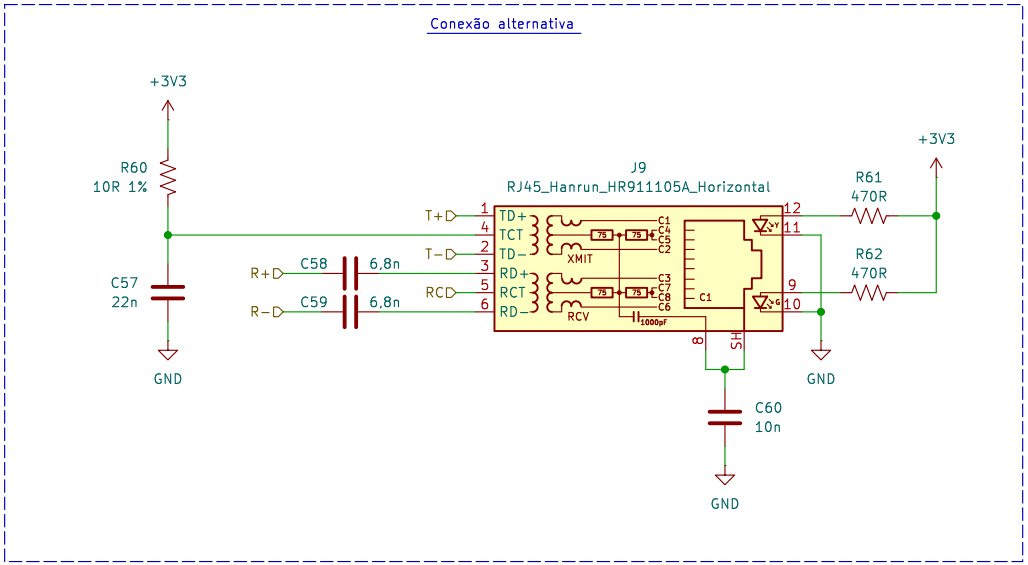

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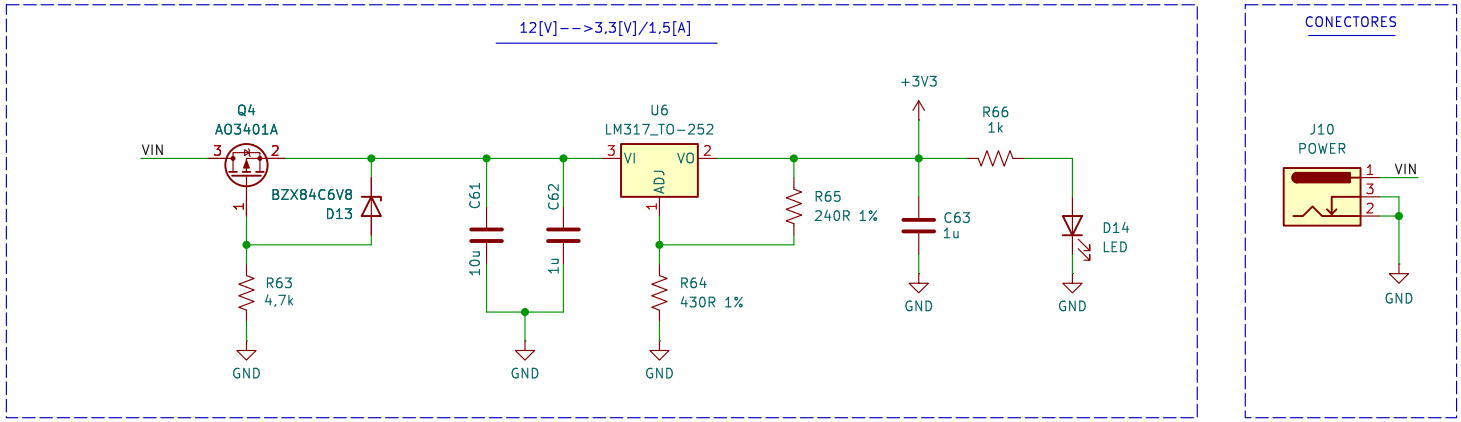

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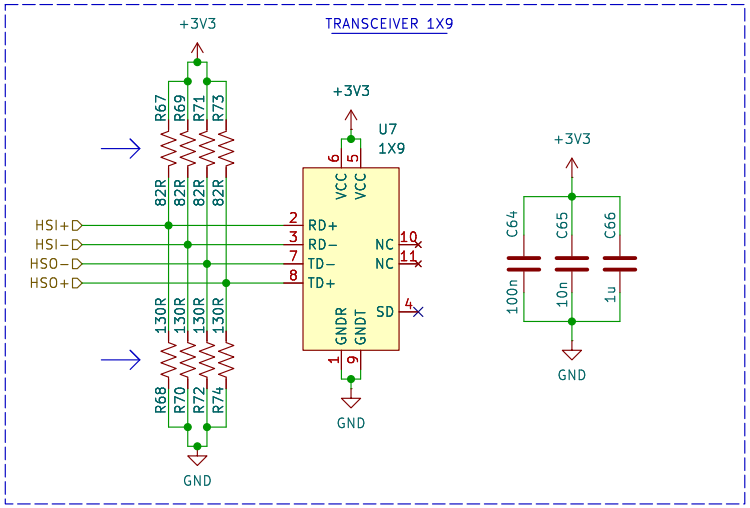

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