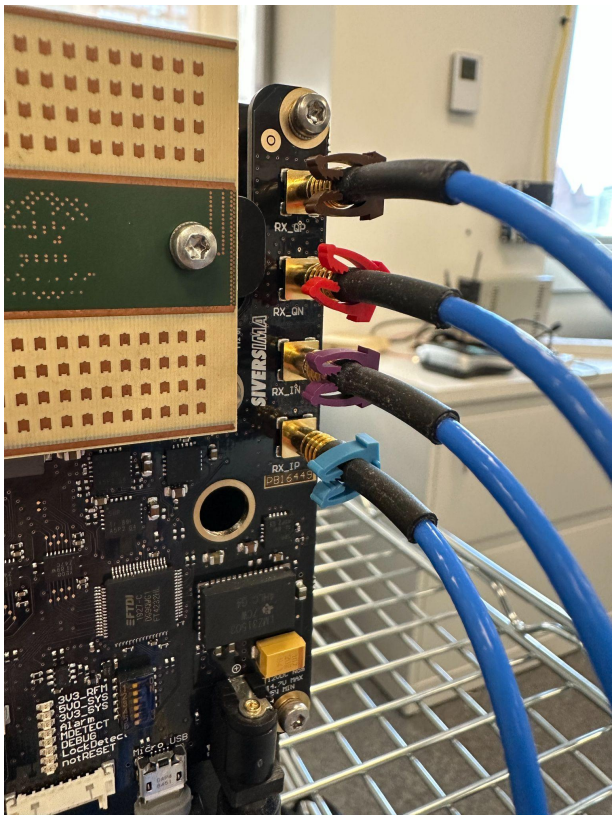
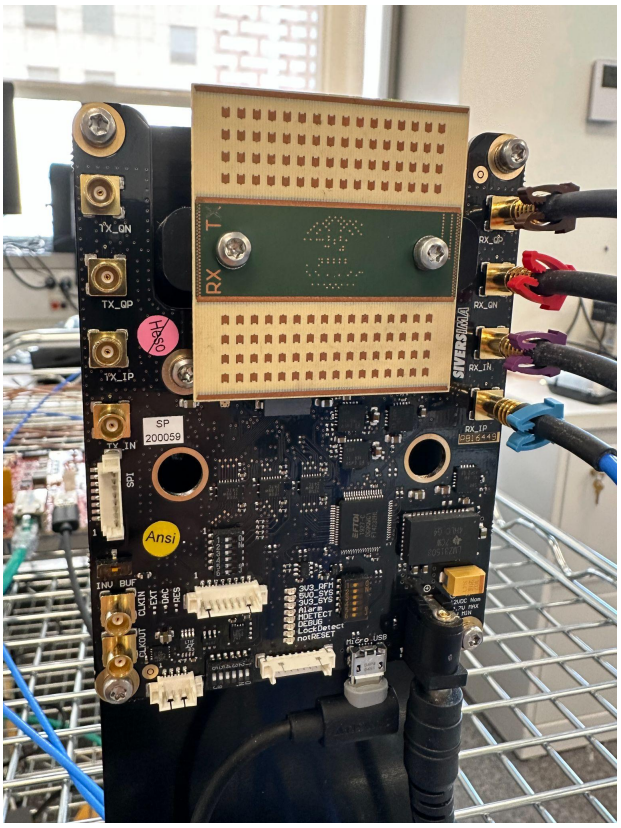
RECEIVER

192.168.0.30 RX (PB16449) Connection: 10.1.1.30

RX_QP (brown)
RX_QN (red)
RX_IN (purple)
RX_IP (turquoise)

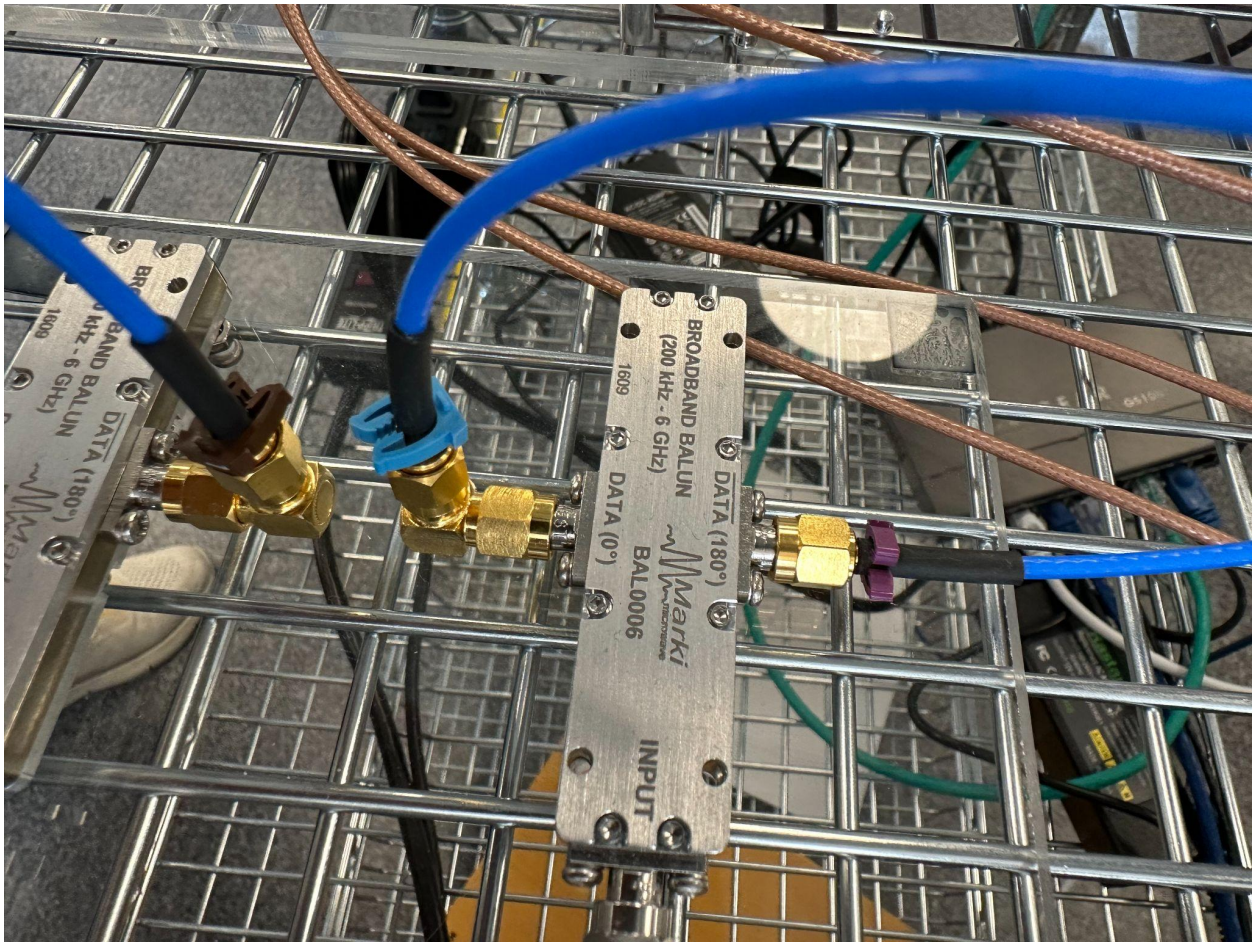


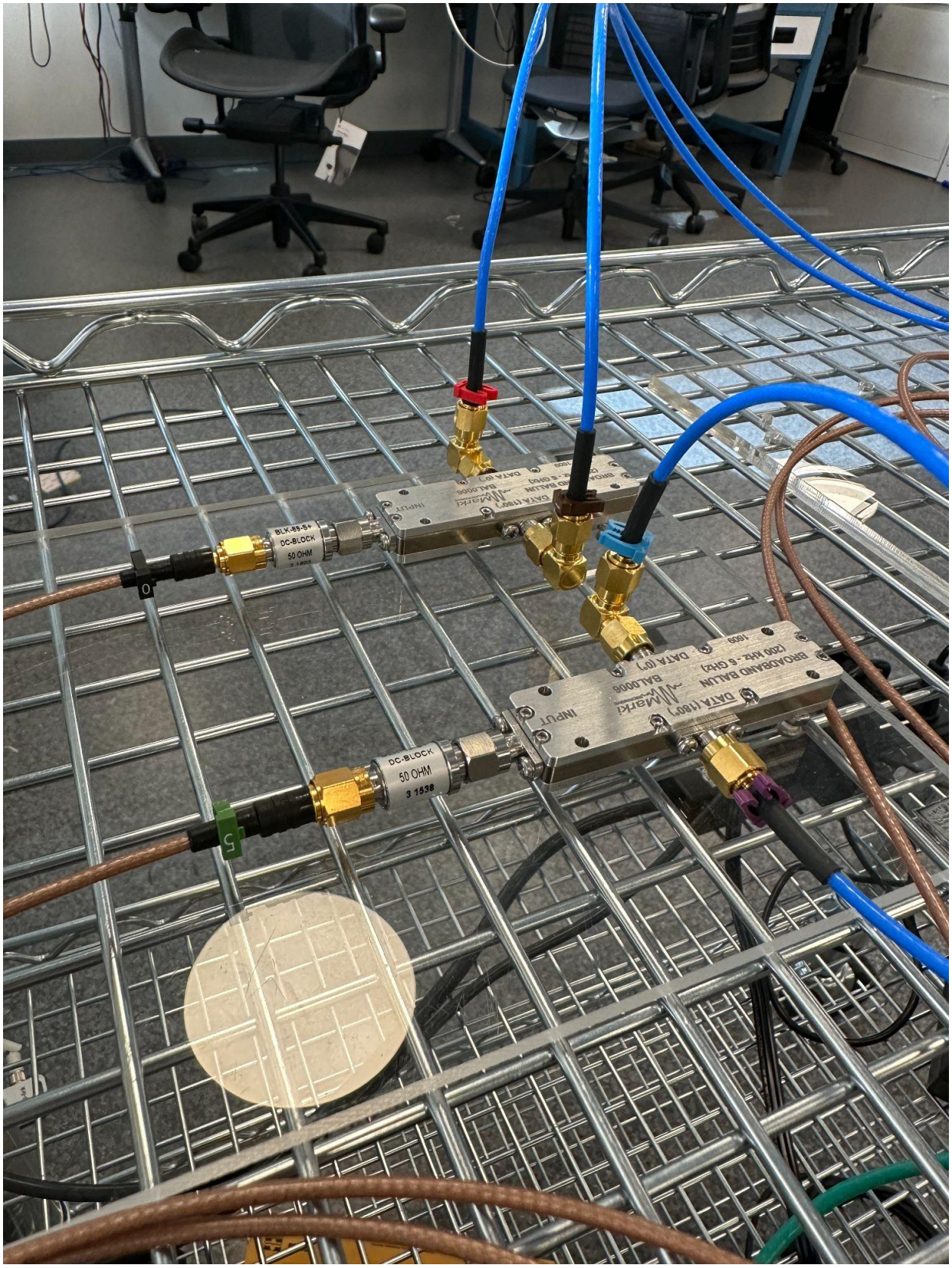


Then connect to two Broadband balun model Merkei BAL0006.

Red - Data (0 degrees) and Brown - Data (180 degrees), the output is black
Blue-Data (0 degrees) and purple (180 degrees), the output is green

Each input port of BAL0006 is connected to one MCL15542 BLK-89-S+ DC BLOCK 50 OHM [3 1603 (OR 3 1538)].
(This is different from TX!) TX needs to connect more.



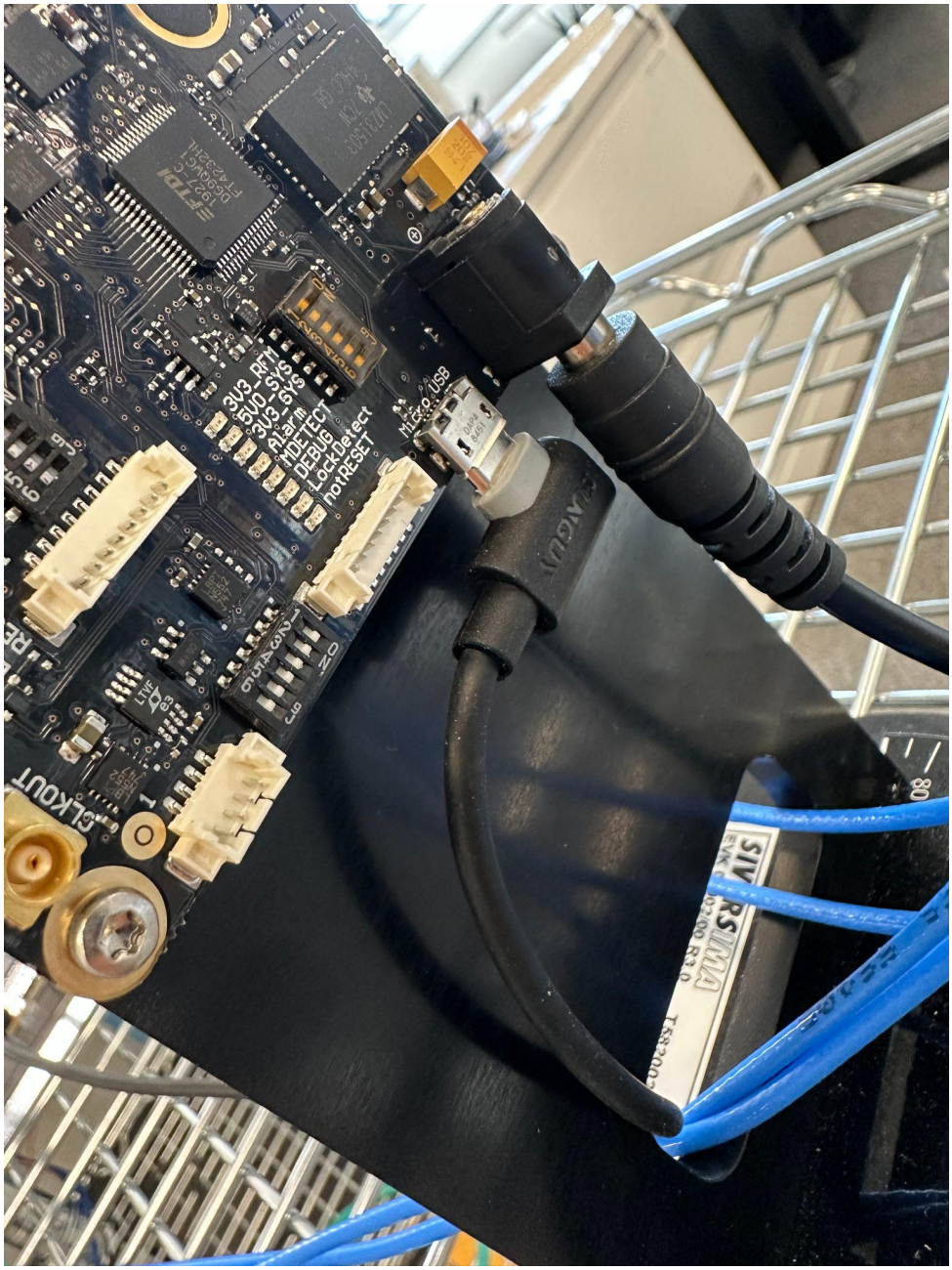

BLK-89-S+
DC-BLOCK
50 OHM
0
DC-BLOCK
50 OHM
3 1538
5
INPUT
DATA (180°)
DATA (0°)
BALUN
BROADBAND BALUN
(200 MHz - 6 GHz)

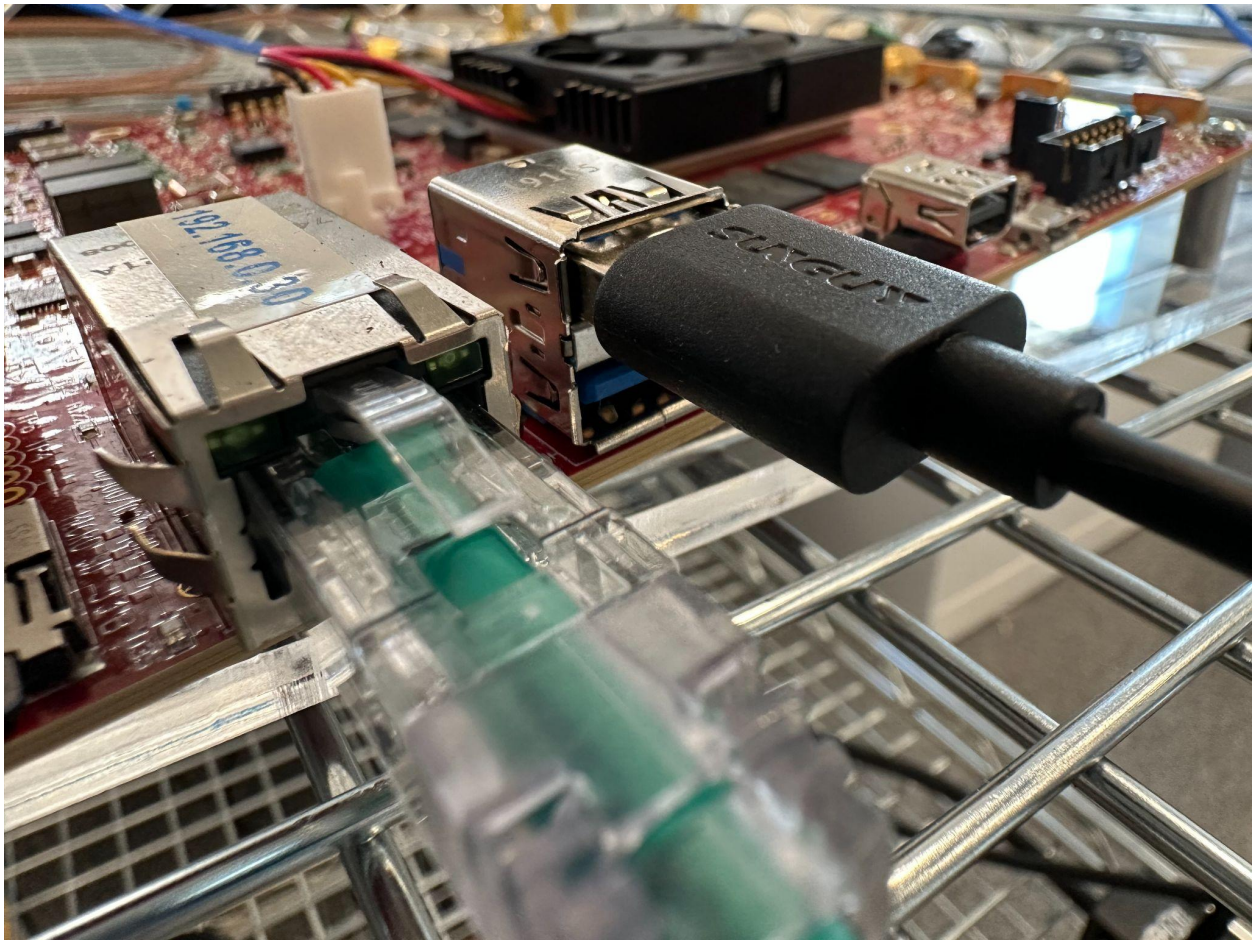
Then black and green are connected to the ADC ½ port of the FPGA board
ADC 1 Connection Black
ADC 2 connection Green

SYNCIN
J6
R1
ADC2
J5
T4
R17
R16
R24
C20
R18
C21
ADC1
J4
T3
R14
R13
R23
C18
R15
C19
DAC2
J3
C2
R11
R10
C17
HTG-ZRF2-XUP
REV:1.1
HTG
LOKAL
TTECH
R6
C7
R19
U2
C10
R25
C22
C26
C27
R30
FB2

And then other lines:
Antenna power cord: AC/DC ADAPTER
MODEL: ANY-125000-K909 INPUT: 100-240V~2.0A(2.0A) 50-60Hz OUTPUT: 12V- 5.0A

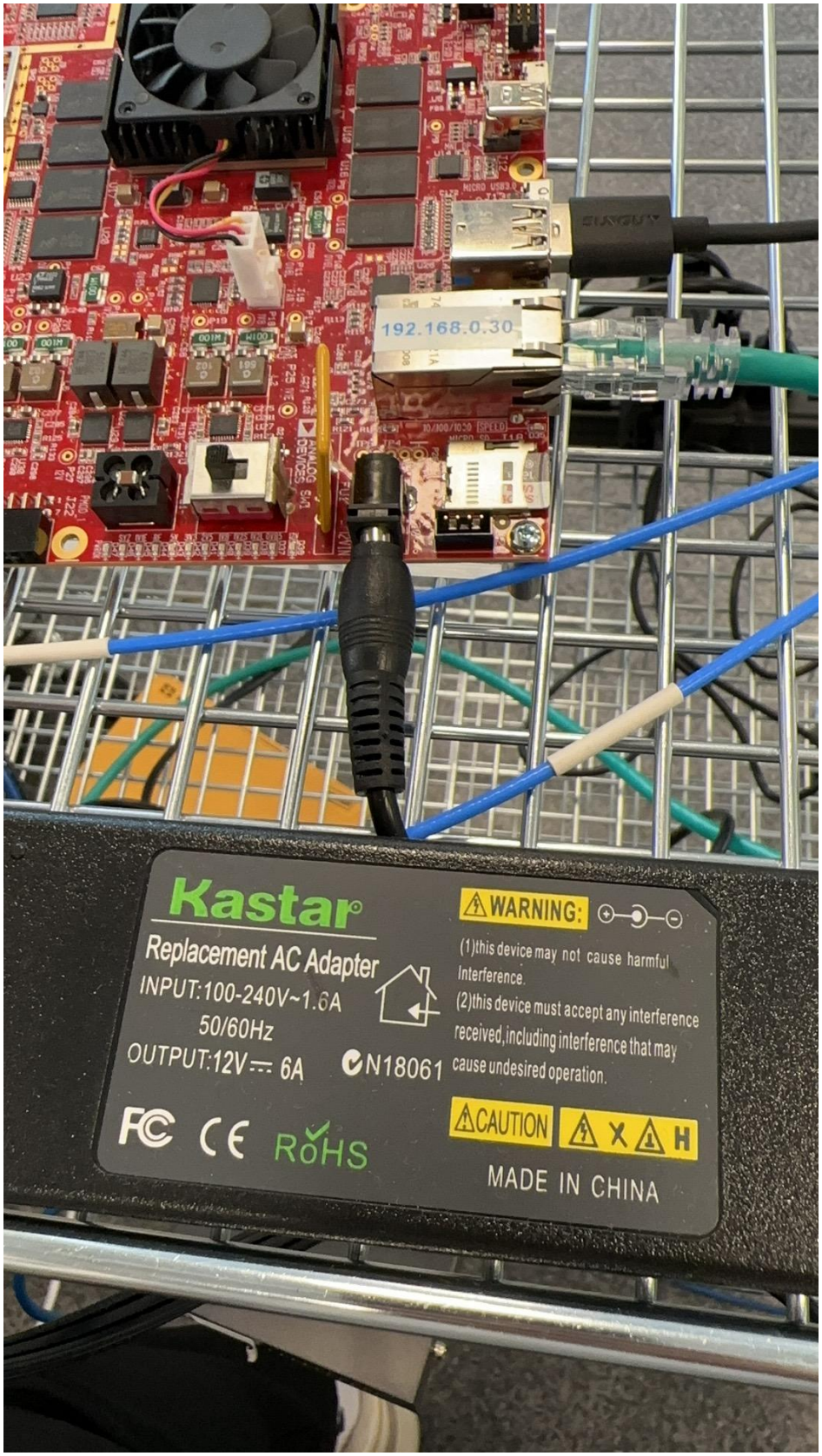
The mirco usb port of the antenna is connected to the port above the FPGA USB 19105 (there are upper and lower layers)

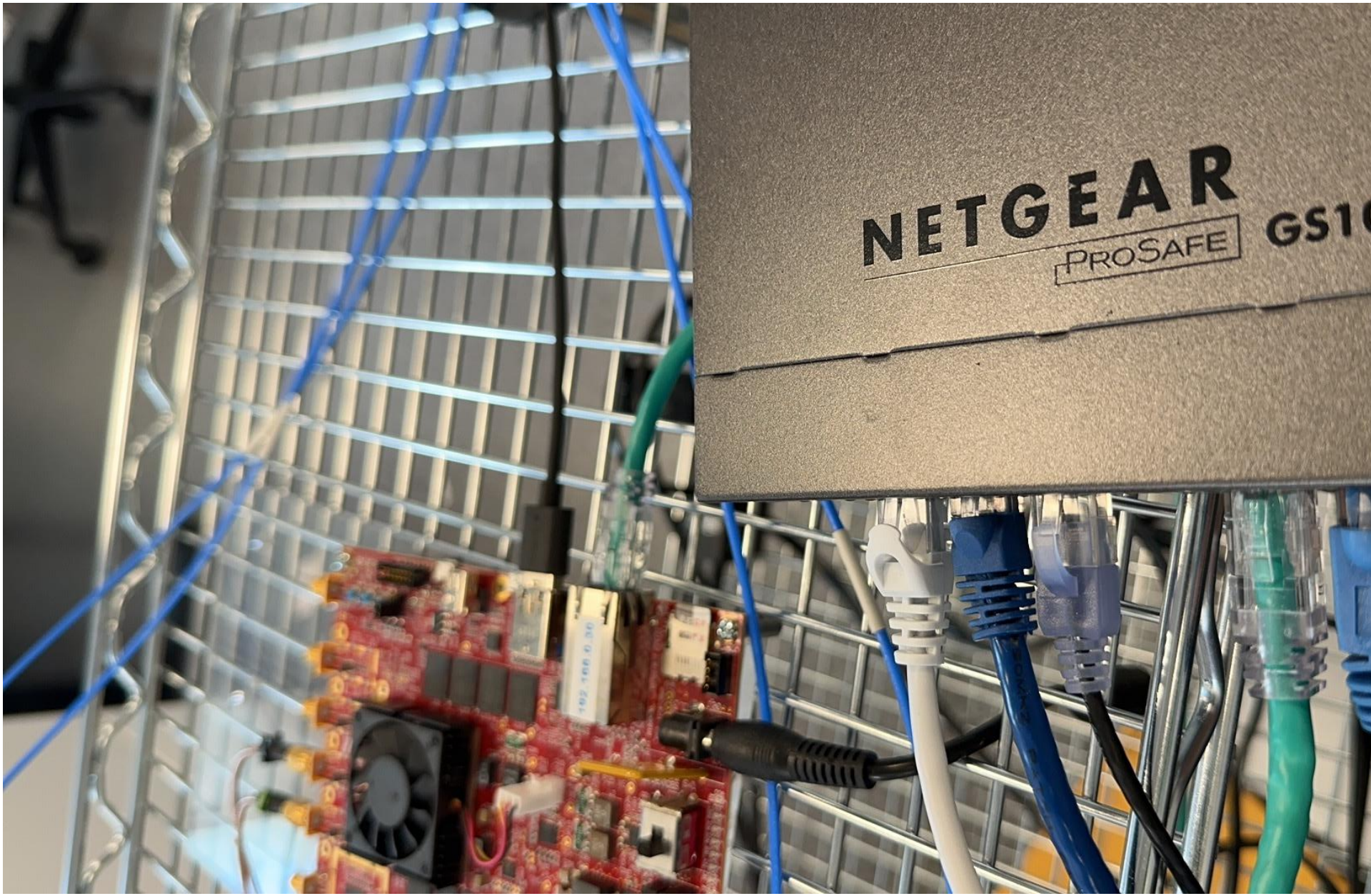




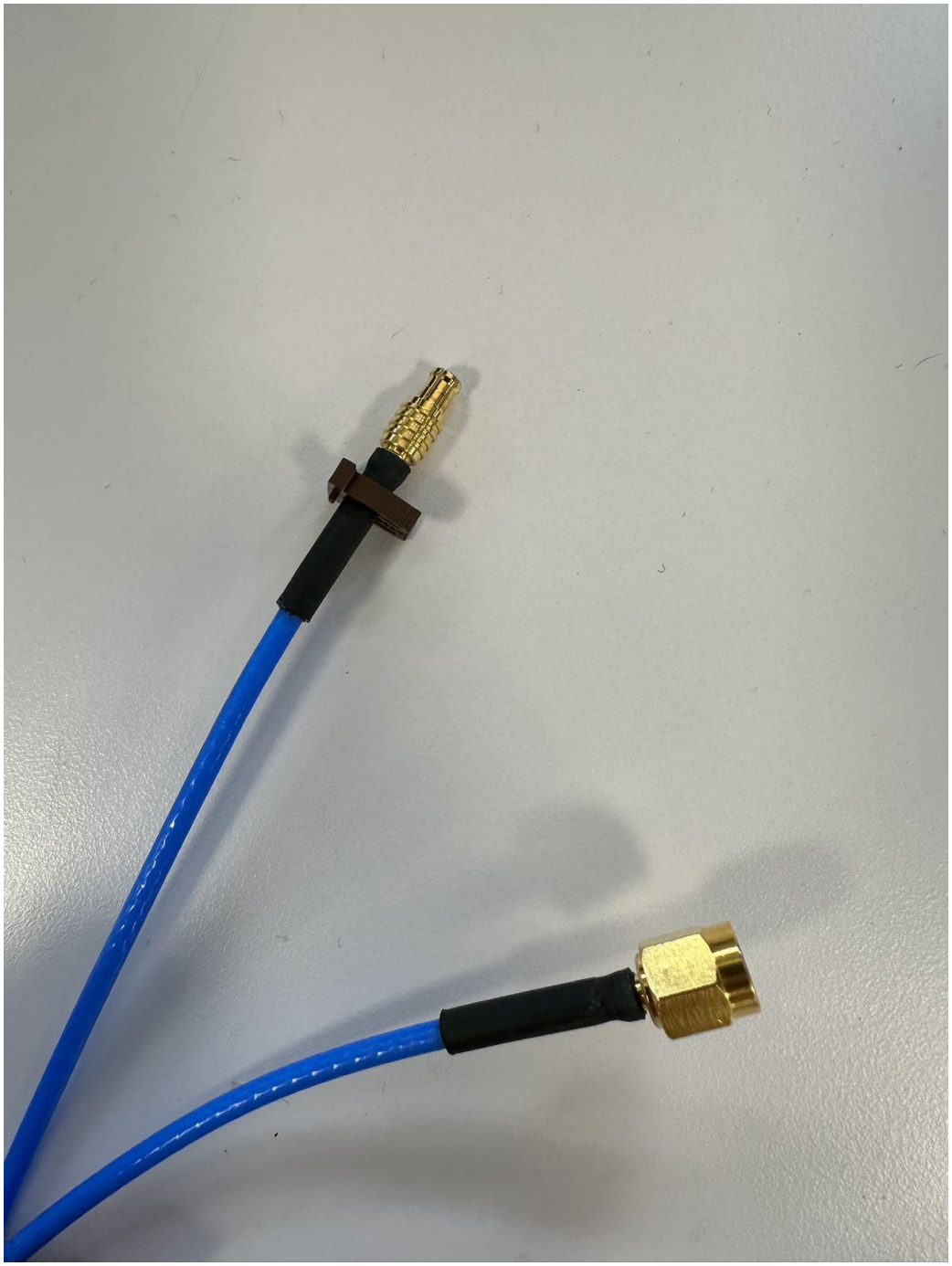
FPGA power cable: 12V-6A

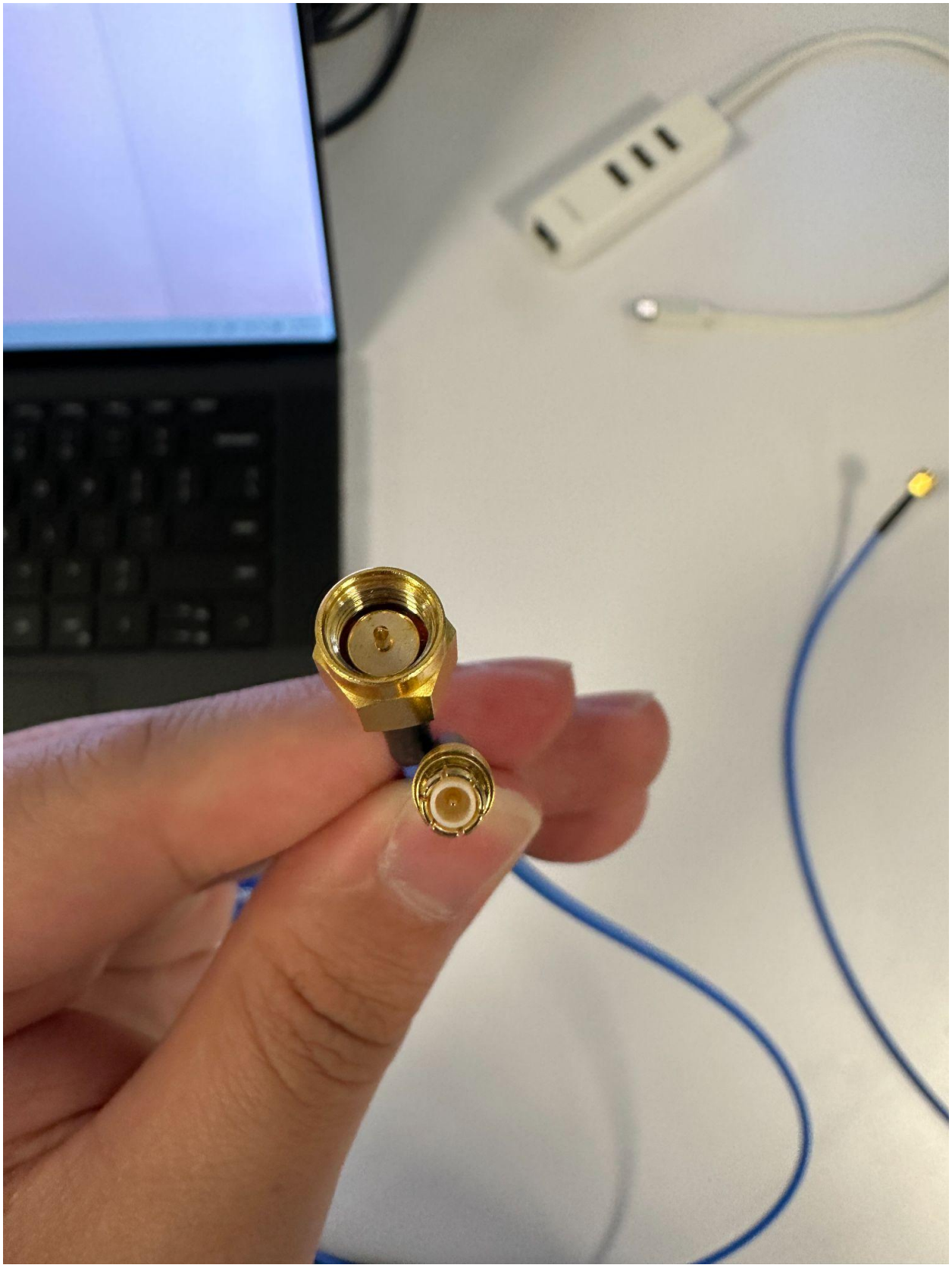
Finally the FPGA network cable is connected to the switch

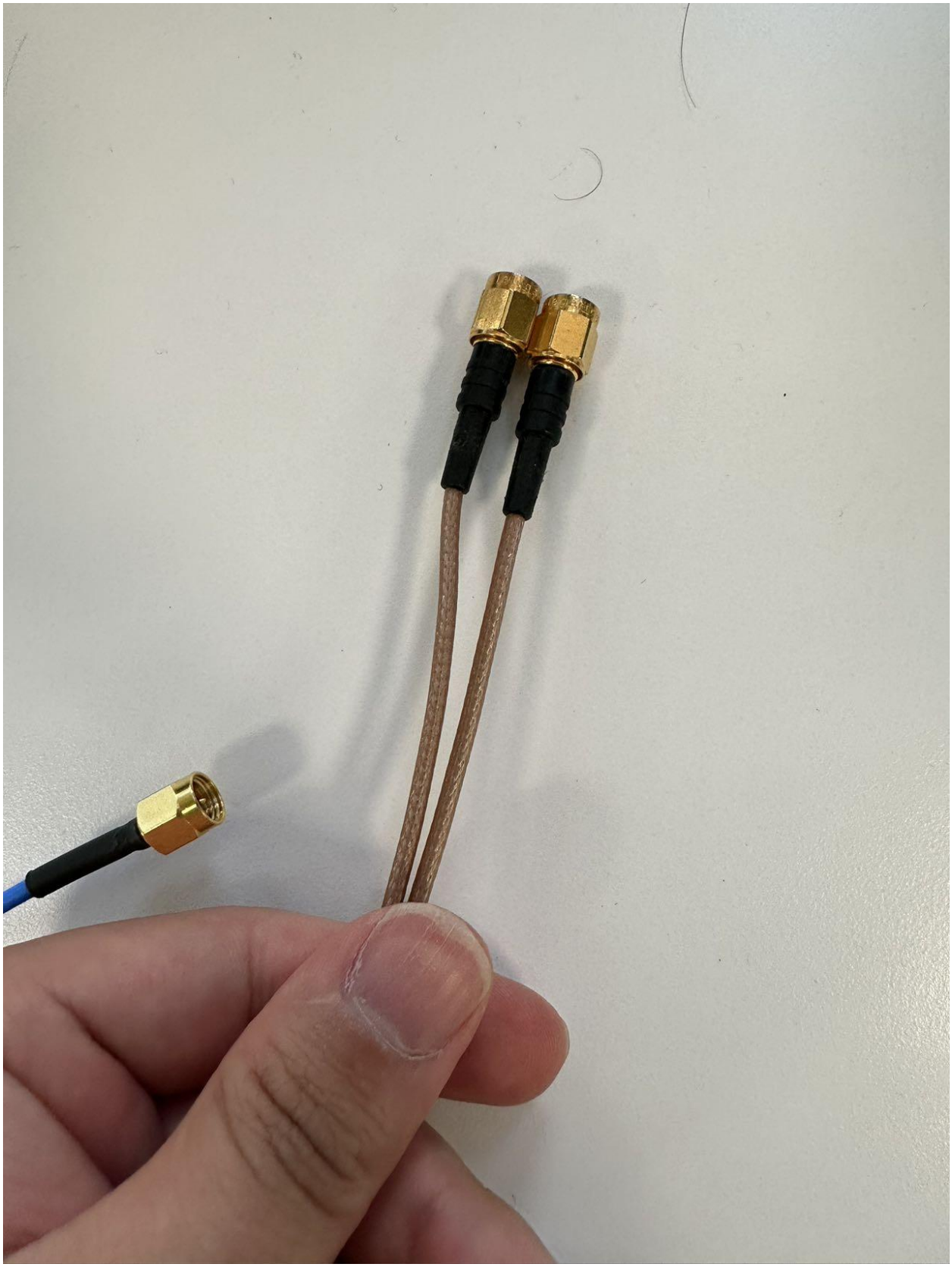

192.168.0.30
Kastar
Replacement AC Adapter
INPUT:100-240V~1.6A
50/60Hz
OUTPUT:12V⎓ 6A
N18061
WARNING:
(1)this device may not cause harmful interference.
(2)this device must accept any interference received,including interference that may cause undesired operation.
CAUTION
RoHS
MADE IN CHINA


NETGEAR
PROSAFE
GS1

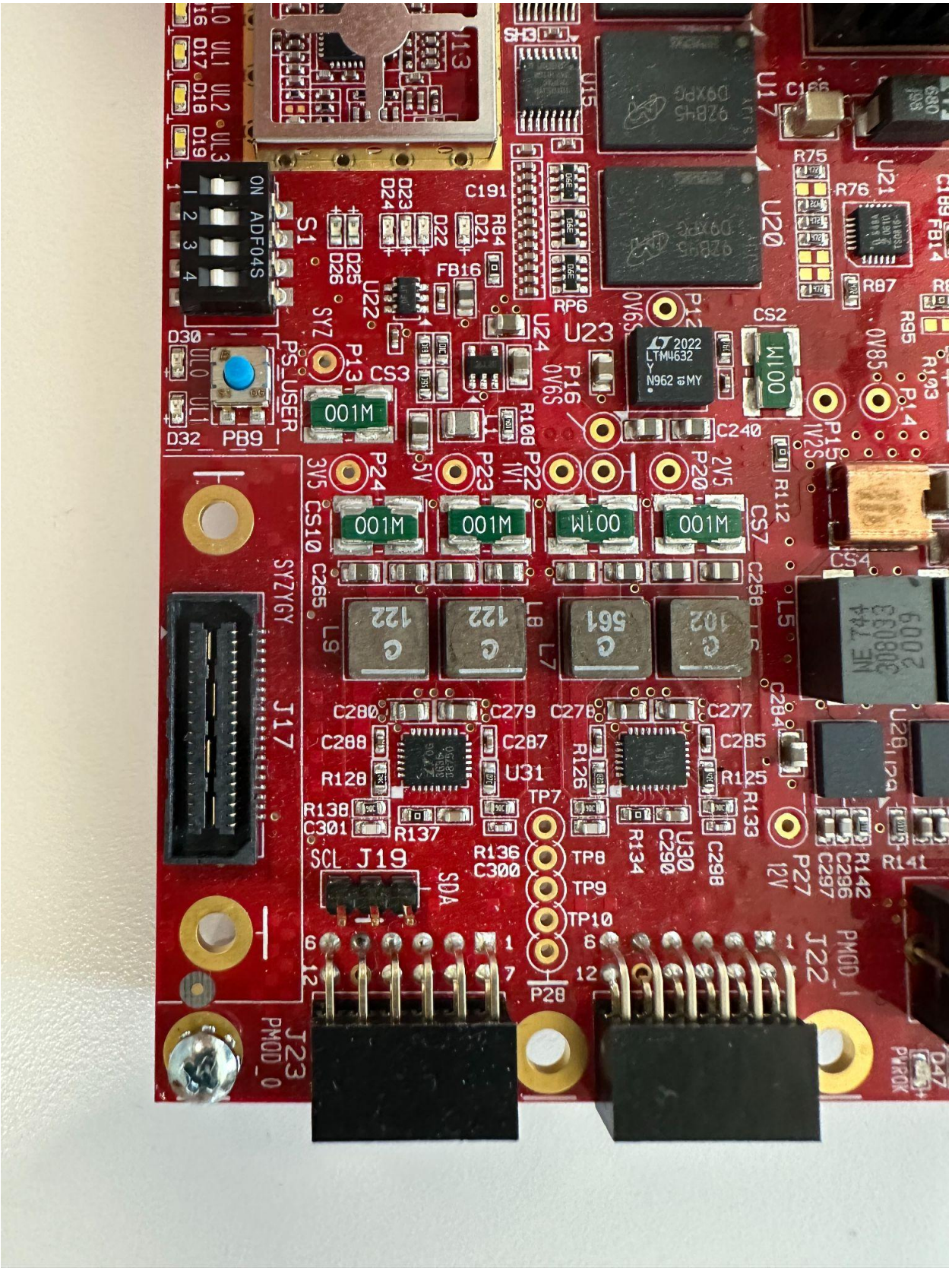
The blue (antenna-Bal0006) wire is small head (plug-in type) + big head (rotary screw type)
The gold (bal0006 - mcl 15542 - FPGA adc) wire is bulk + bulk

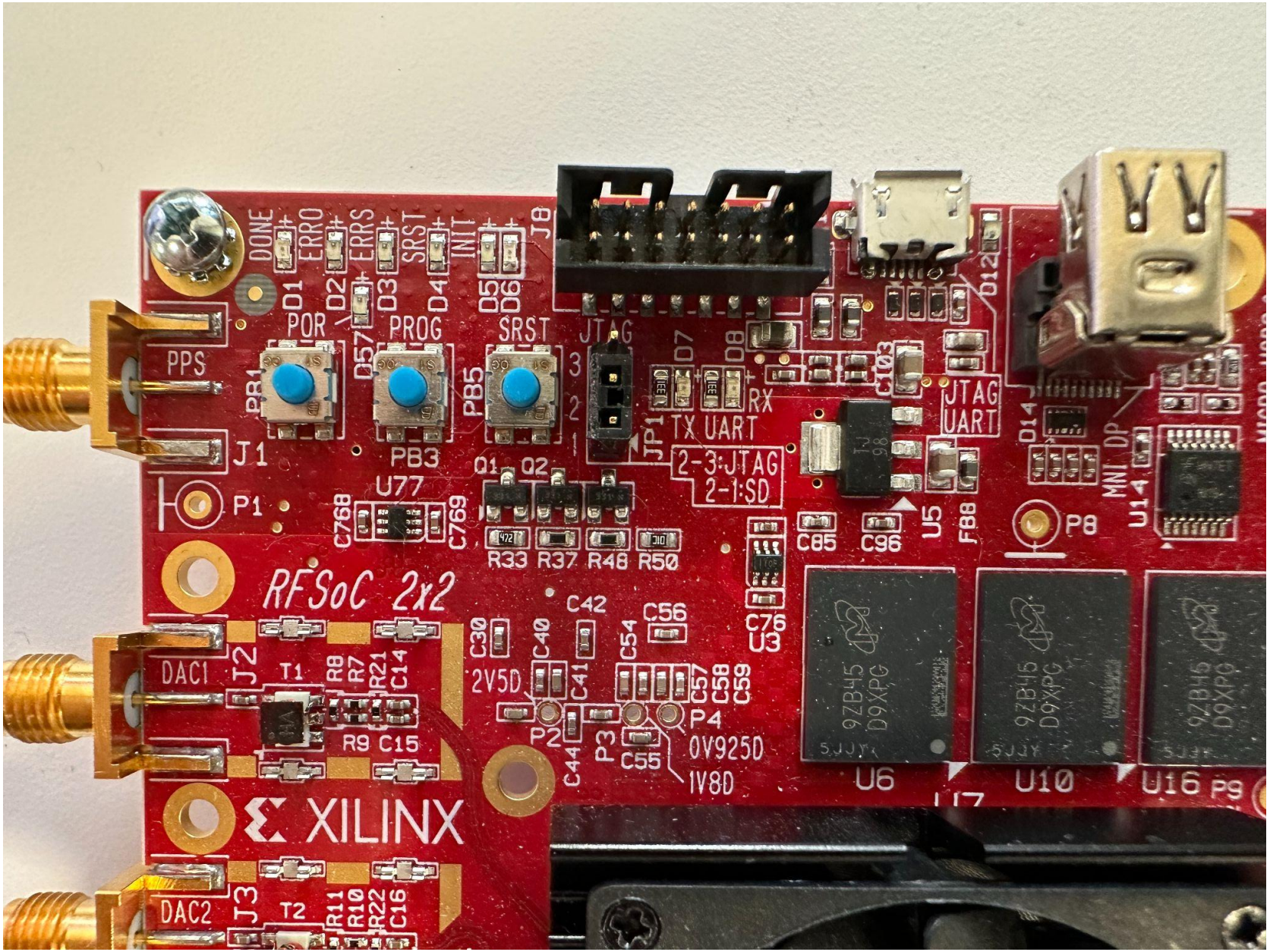






The switch on the FPGA board: Note that Jtag 1-2 is connected and 3 is exposed

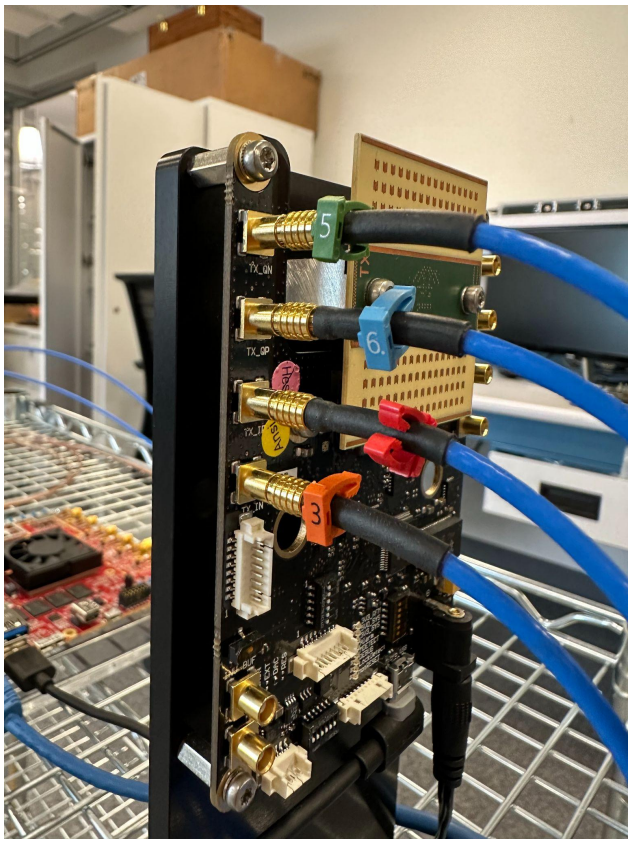


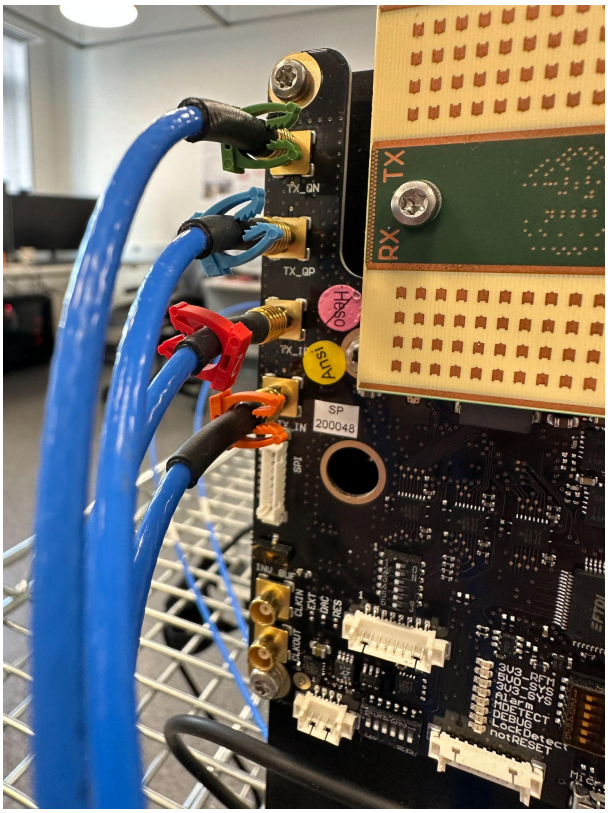

DONE
ERRO
ERRS
SRST
INIT
J8
D1
D2
D3
D4
D5
D6
POR
PROG
SRST
JTAG
PPS
PB1
D57
PB3
PB5
3
2
1
D7
D8
RX
TX UART
JP1
2-3:JTAG
2-1:SD
C103
JTAG
UART
D12
D14
MNI DP
U14
J1
P1
U77
Q1
Q2
C768
C769
R33
R37
R48
R50
U5
C85
C96
FB8
P8
RFSoC 2x2
C42
C56
C30
C40
C54
C76
U3
DAC1
J2
T1
R8
R7
R21
C14
2V5D
C41
C57
C58
C59
R9
C15
P2
P3
P4
C44
C55
0V925D
1V8D
U6
U10
U16
P9
XILINX
DAC2
J3
T2
R11
R10
R22
C16

TRANSMITTER

192.168.0.40 TX (PB16449) Connection: 10.1.1.40

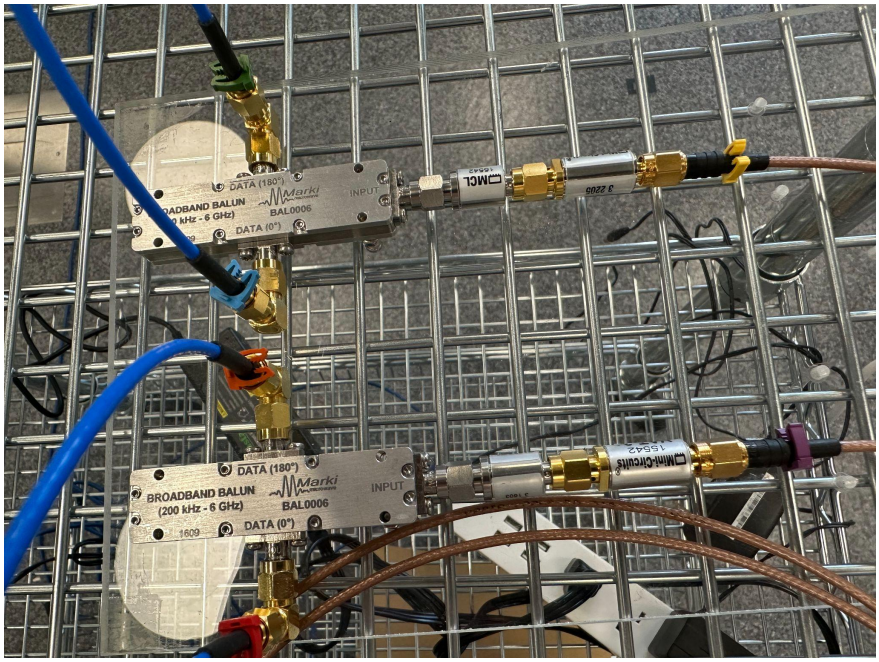
Starting from the antenna end:
TX_QN (green)
TX_QP (blue)
TX_IP (red)
TX_IN (orange)

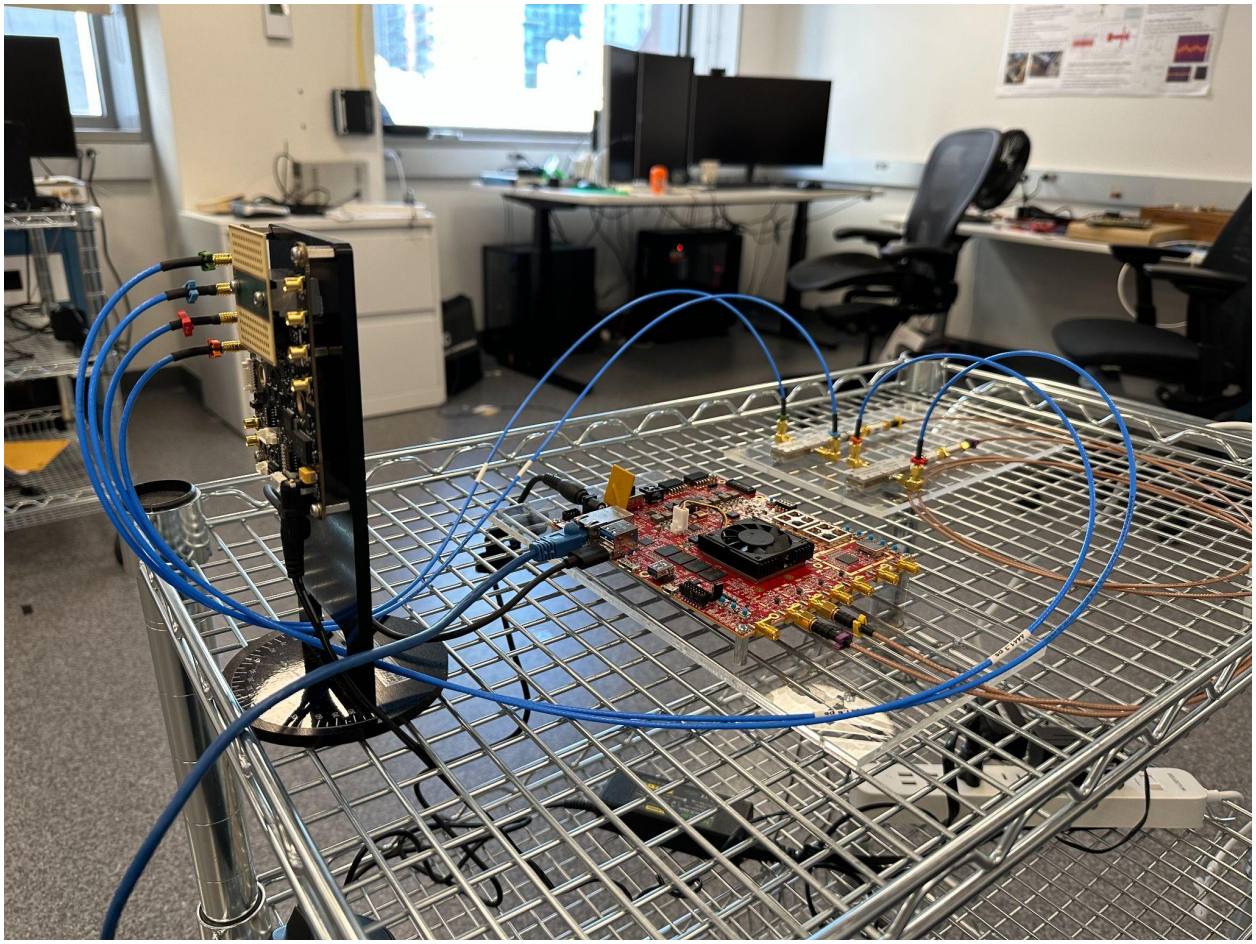




Then connect to two Broadband balun model Merkei BAL0006

Blue - Data (0 degrees) and Green - Data (180 degrees), the output is yellow
Red-Data (0 degrees) and Orange (180 degrees), the output is purple
Note that BAL0006 INPUT has two small tails, see the next item for details

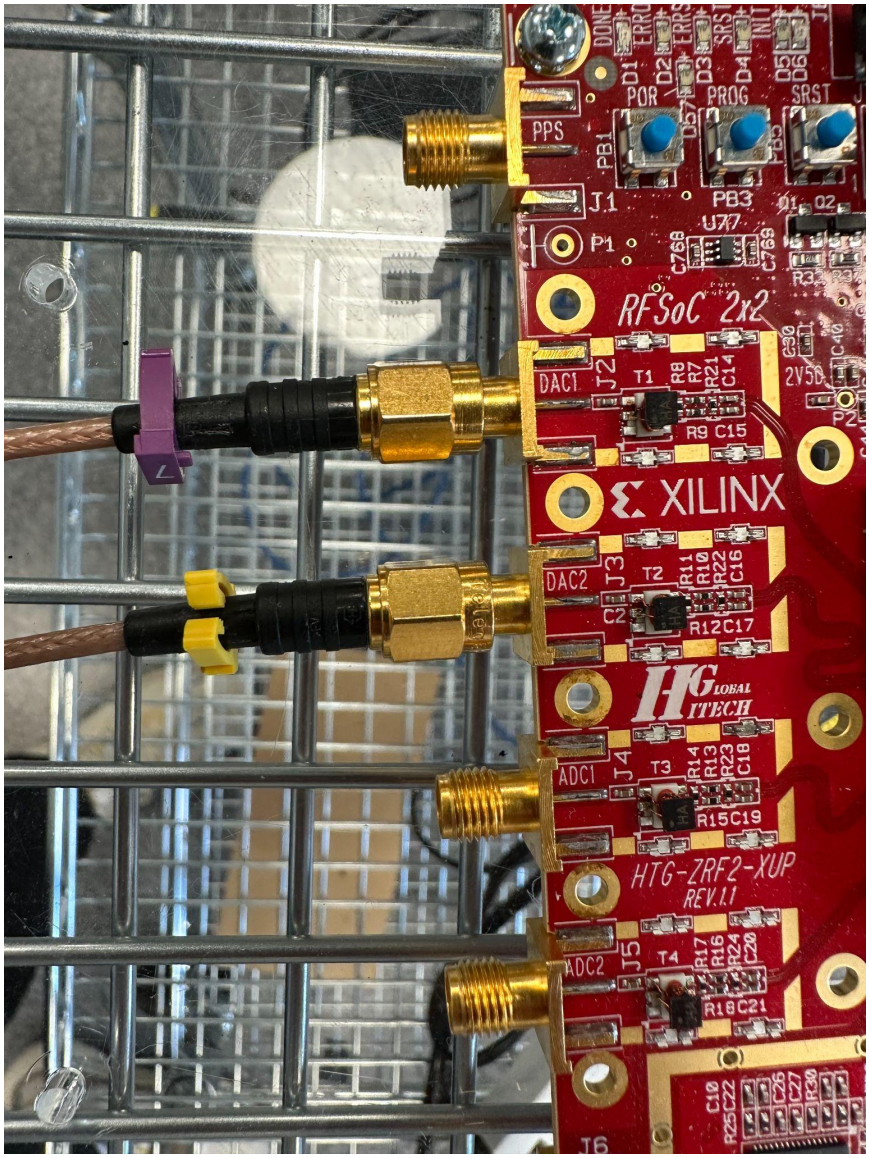




Each input port of BAL0006 is connected to one MCL15542 BLK-89-S+ DC BLOCK 50 OHM [3 1603 (and 31603) here are two same, it doesn't matter]
Then connect a MINI-CIRCUITS 15542 VAT-3+ 3dB ATTENUATOR 50 OHM 3 2205

50 OHM
3 2205
MCL
15542
BLK-89-S+
DC-BLOCK
INPUT
Mini-Circuits®
15542
MCL
15542
BLK-89-S+
DC-BLOCK
INPUT

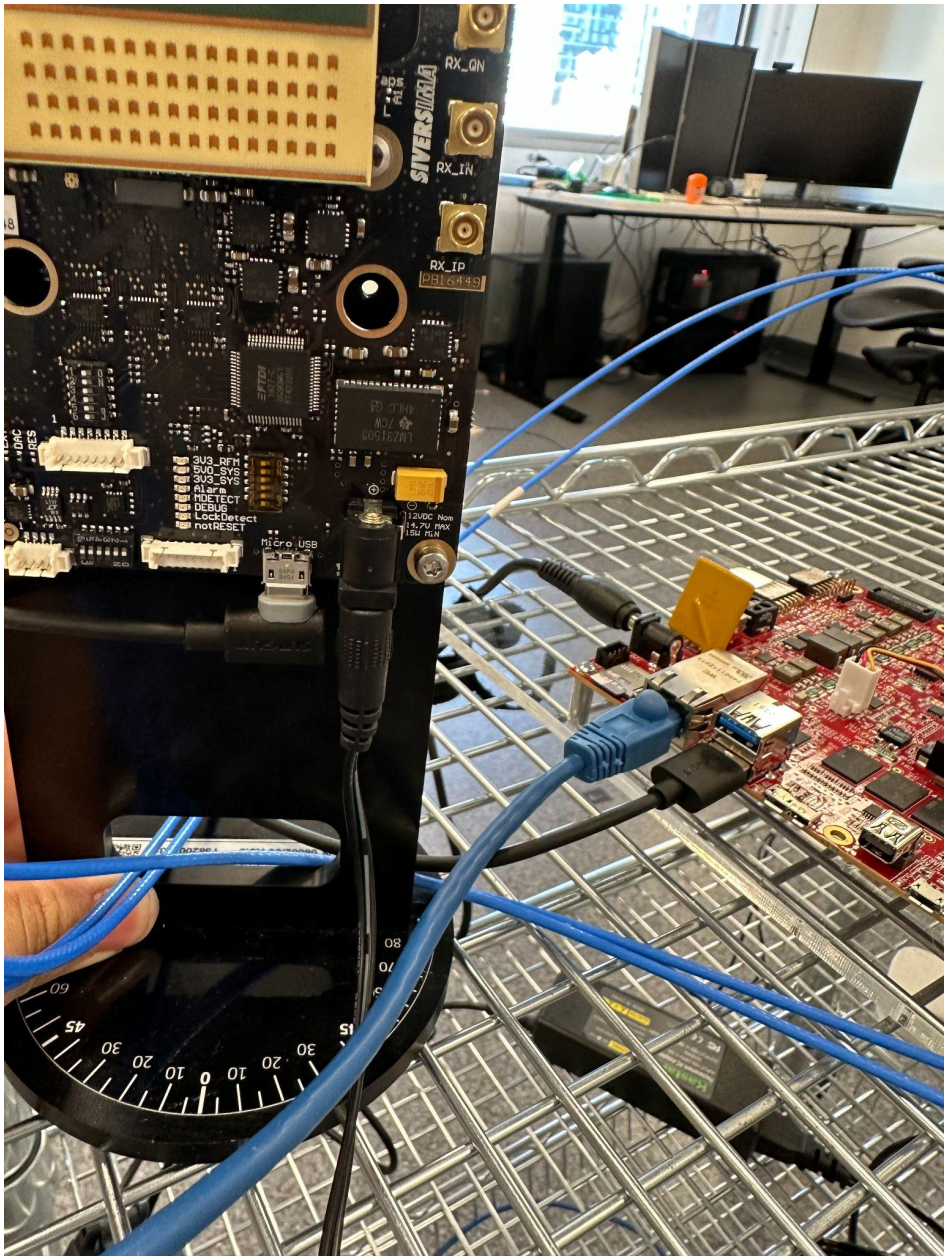
Then purple and yellow are connected to the DAC ½ port of the FPGA board
DAC 1 Connection Purple
DAC 2 connection yellow

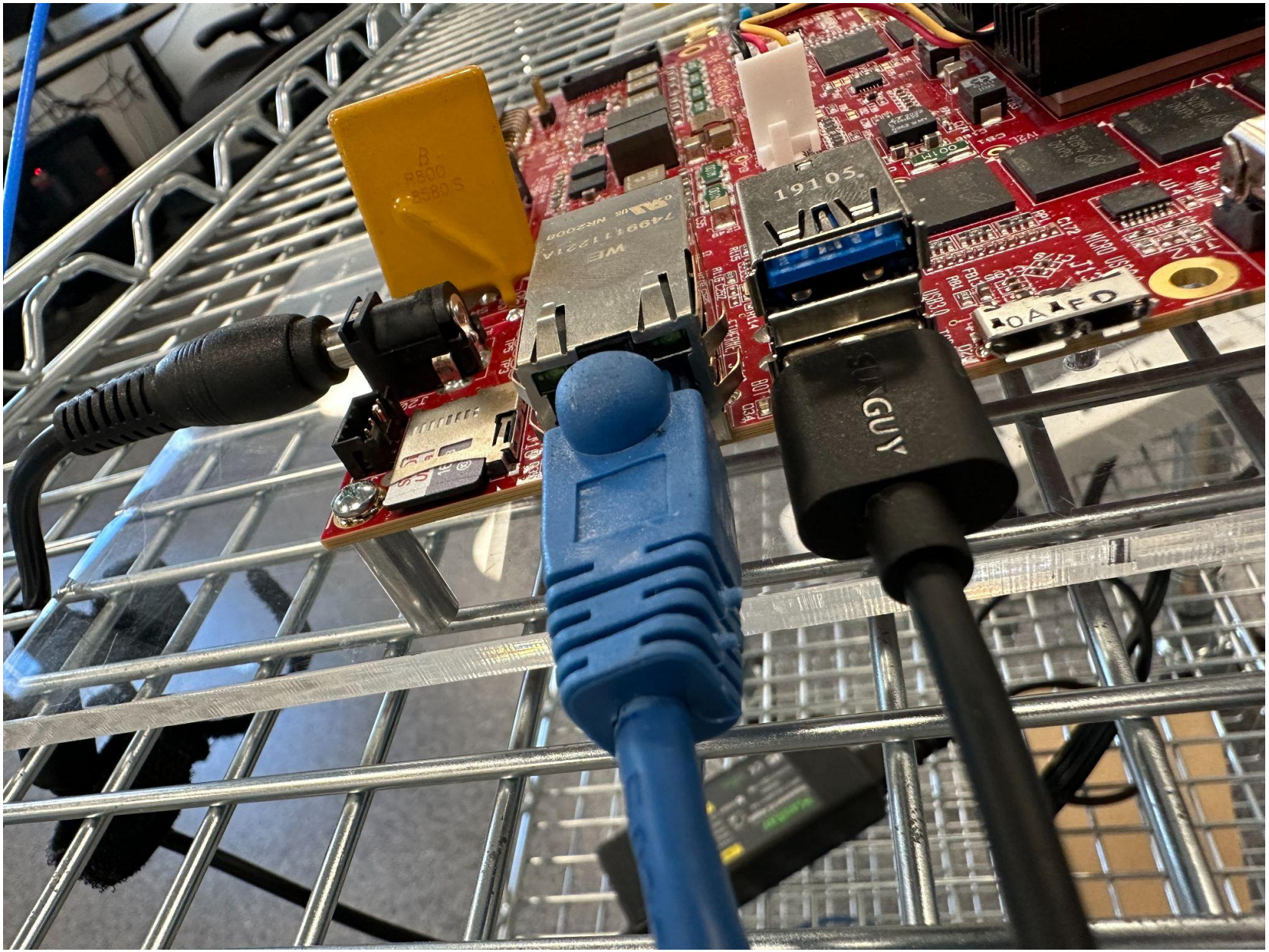


Antenna power cord: AC/DC ADAPTER
In theory, you can use the same power supply as RX, here is because the experiment does not have that power supply OUTPUT: 12V- 1.0A

3V3_RFM
5V0_SYS
3V3_SYS
Alarm
MDETECT
DEBUG
LockDetect
notRESET
Micro USB
12VDC Nom
14.7V MAX
15W MIN
NETGEAR
AC-DC ADAPTER
P/N: 332-10190-01
MODEL NO.: MT12-Y120100-A1
INPUT: 100-120V ~ 60Hz 0.3A
OUTPUT: 12V ⎓ 1.0A
Efficiency Level: V
Patented
US LISTED
3G74
E138754
I.T.E. POWER SUPPLY
MADE IN CHINA FY
LEI-4
RoHS

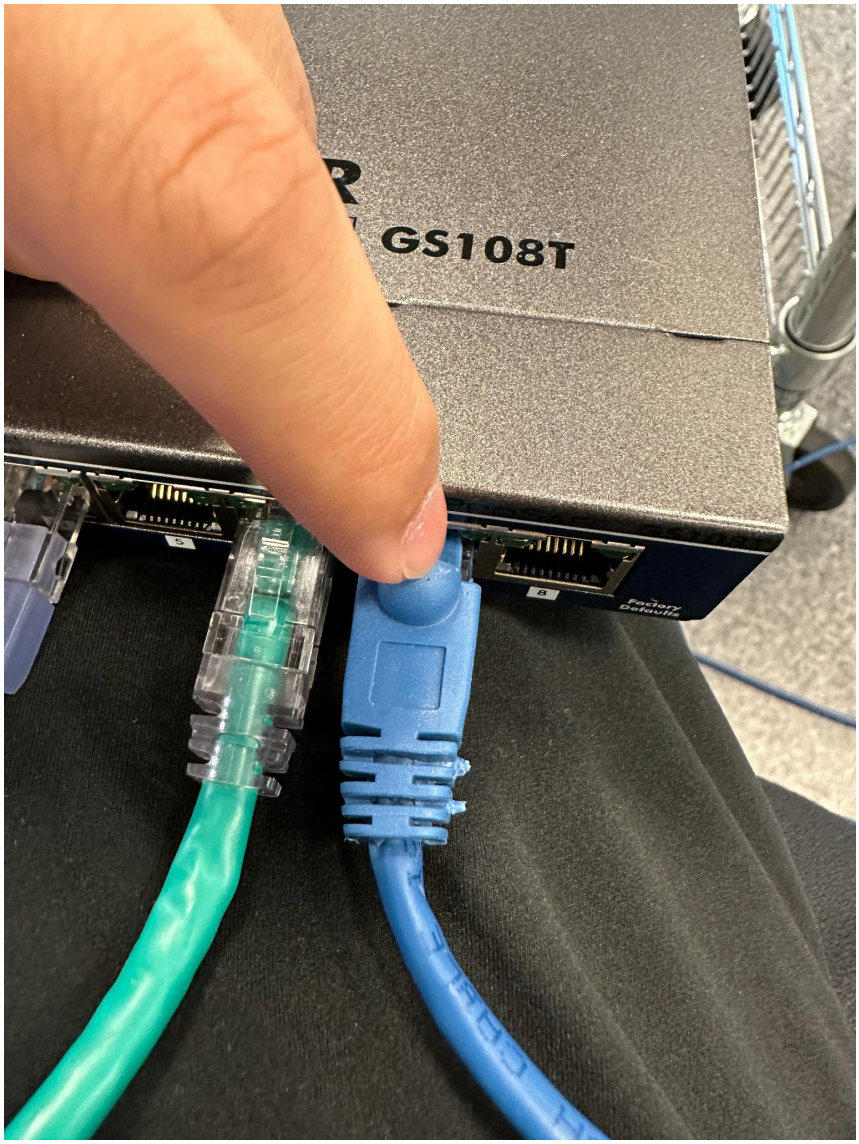
The micro usb interface of the antenna is connected to the port below the FPGA USB 19105 (divided into upper and lower layers), which is different from RX, and uses the port below the bottom



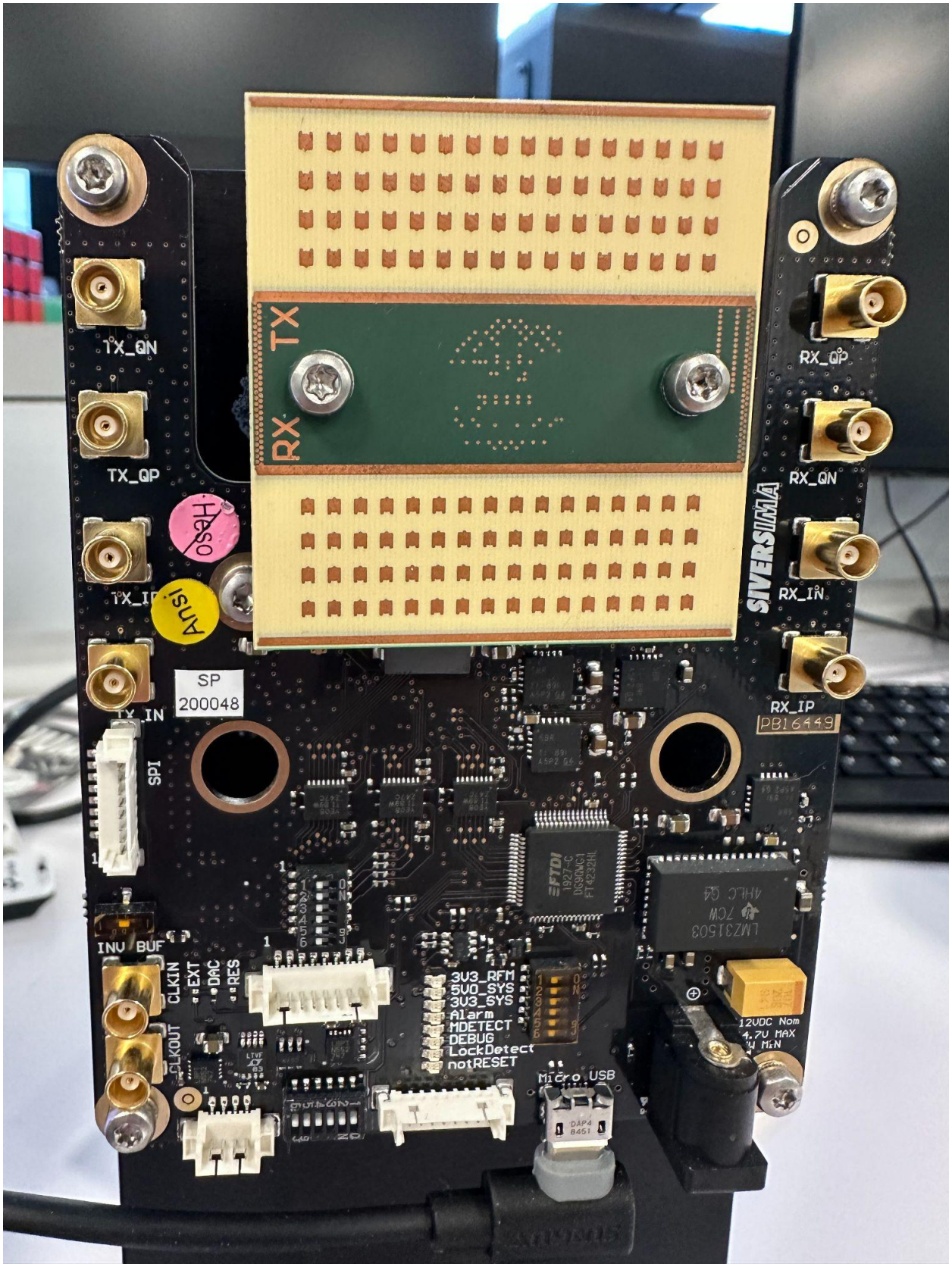

19105.
GUY

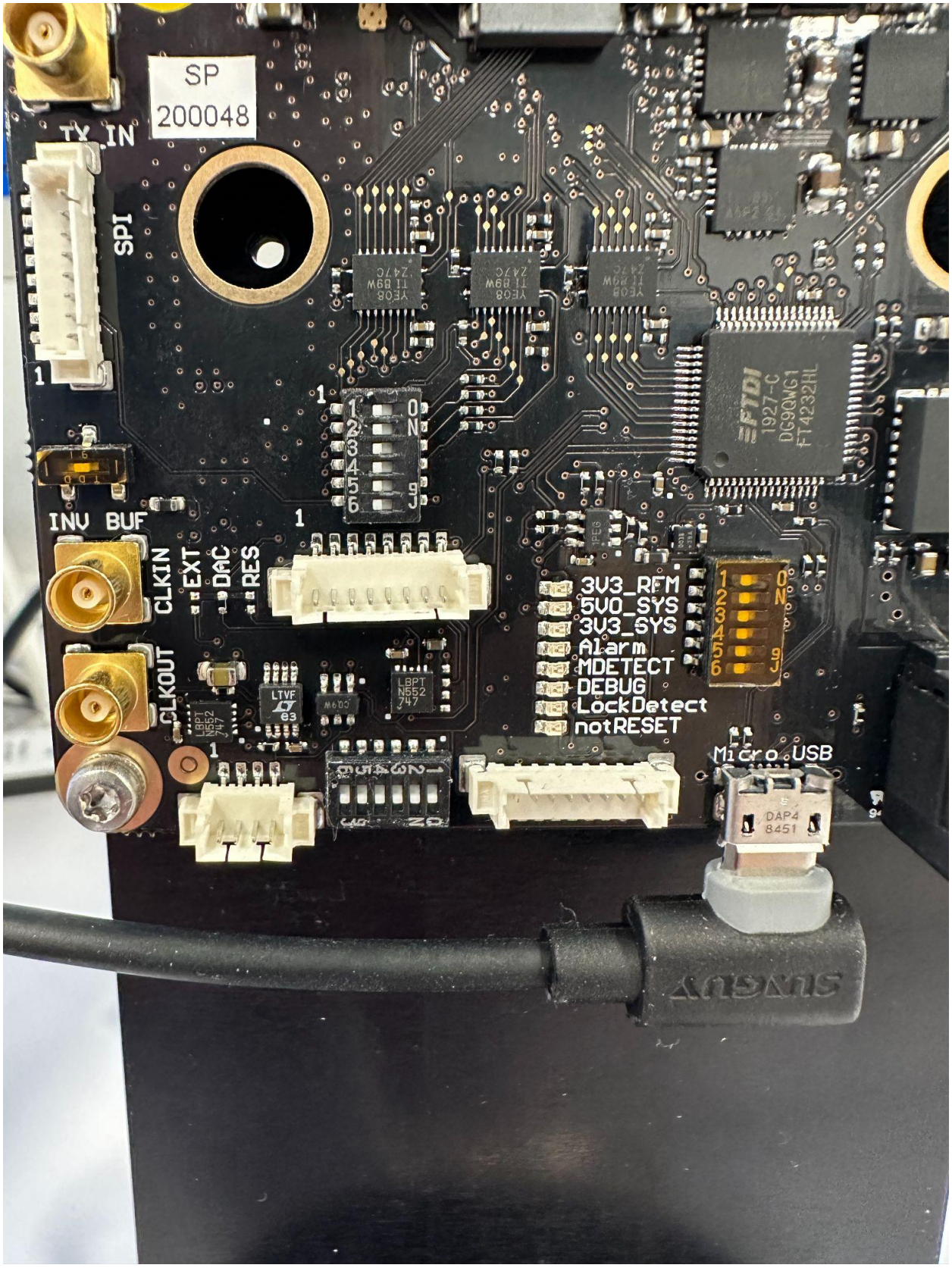
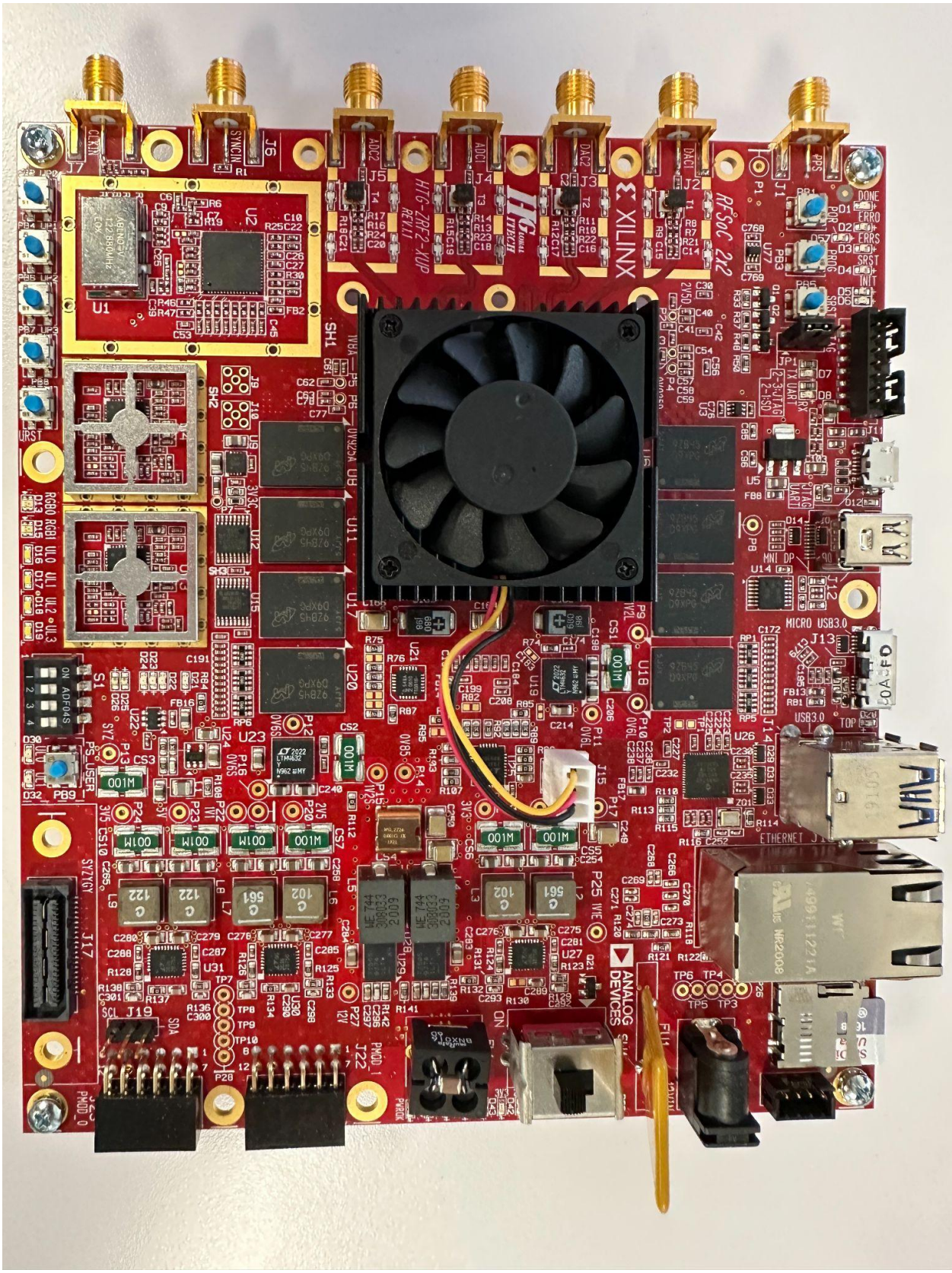
FPGA power cable: 12V-6A (same as RX, no picture taken).

Finally the FPGA network cable is connected to the switch.



The blue (antenna-Bal0006-two small tails) wire is small head (plug-in type) + big head (rotary screw type).
The golden (two small tails - bal0006 - mcl 15542 - FPGA adc) wire is big head + big head
The wire is the same as the RX, no pictures are taken.
High-definition save of the switch above the antenna: seems to be the same as RX.


TX
RX
TX_QN
TX_QP
TX_IP
TX_IN
RX_QP
RX_QN
RX_IN
RX_IP
SIVERSIMA
PB16449
SP
200048
SPI
INV BUF
CLKIN
EXT
DAC
RES
CLKOUT
3V3_RFM
5V0_SYS
3V3_SYS
Alarm
MDETECT
DEBUG
LockDetect
notRESET
Micro USB
12VDC Nom
4.7V MAX
4V MIN


SP
200048
TX_IN
SPI
INV BUF
CLKIN
EXT
DAC
RES
CLKOUT
3V3_RFM
5V0_SYS
3V3_SYS
Alarm
MDETECT
DEBUG
LockDetect
notRESET
Micro USB
FTDI
1927-C
DG9QWG1
FT4232HL
LTVF
e3
LBPT
N552
747
DAP4
8451

The switch on the FPGA board is saved: Note that Jtag 1-2 is connected and 3 is exposed.