

this file was corrupt because had to use crap libre writer on ubu.
something with TOC wass messed up.
think i fixsed it.

NOTE: dont run mavproxy at same time. screwsup the ports.

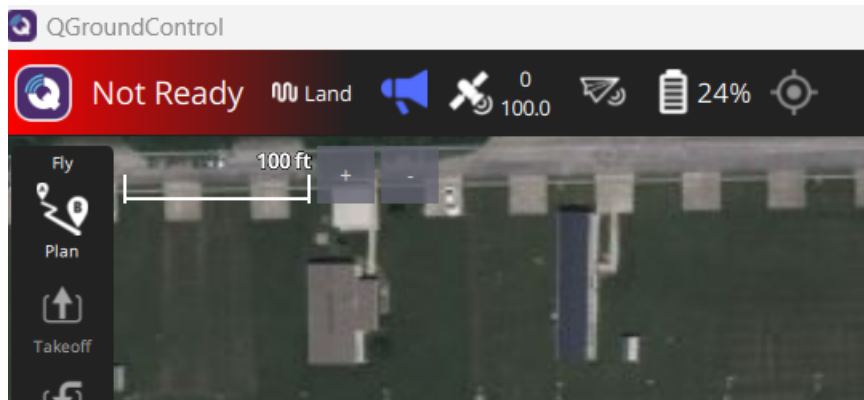
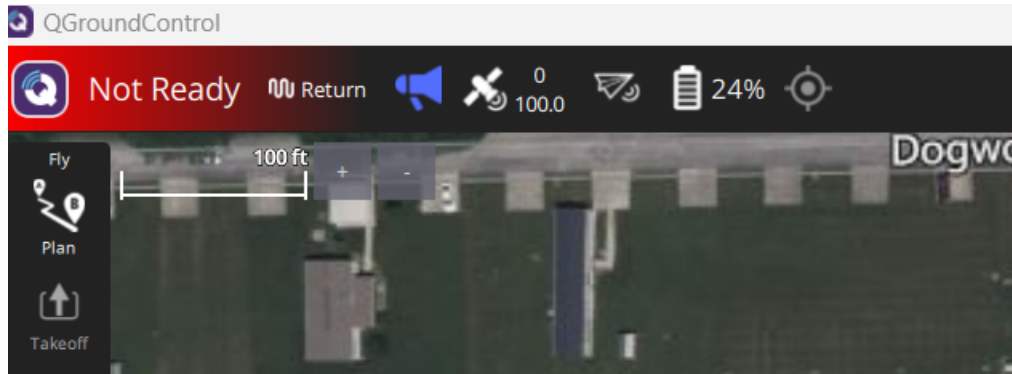
Contents

screenshots	2
!! Nano succesfully switchs Pixhawk 6c modes between RTL and Land !!!.....	2
screenshots from win11, connection via holybro telem radios win11 <-> pix6c	2
general setup.....	2
qgc connection by wireless.....	3
6c powered by battery, jnano connect to ttl_usb.....	3
performed land, rtl , back and forth.....	4
closeup.....	5
can disconnect battery and soemtimes 6c will run on usb_ttl power for a whie... not predictable.....	6
try to do same command twice thats a problem.....	6
just cancel and do otehr command.....	7
0 terminal 0	8
0 TERMINAL 1	8
1 24.0609_1_test_connection.py	11
2 24.0609_2_land.py	12
3 24.0609_3_return_to_launch.py	13

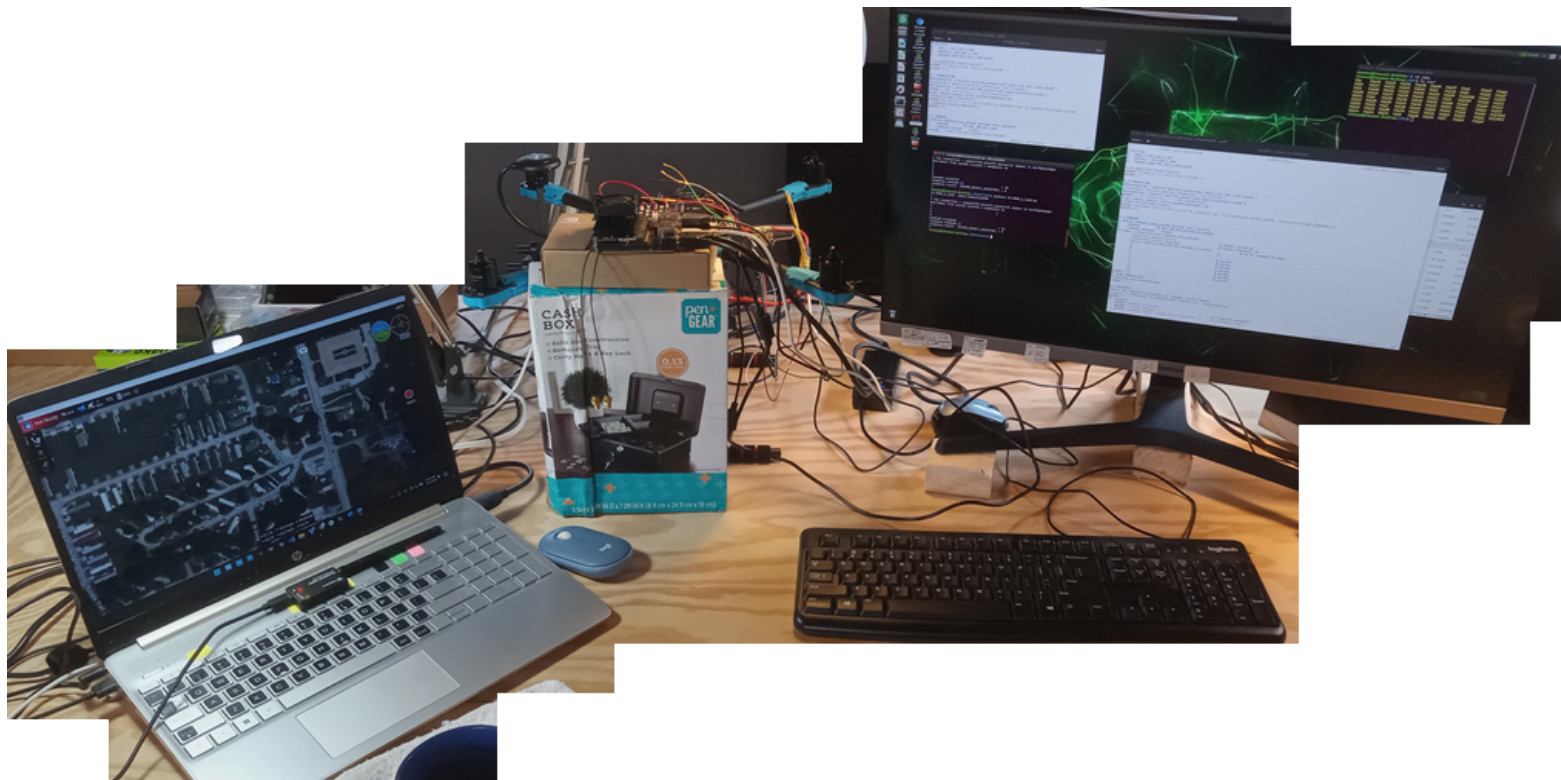
screenshots

!! Nano succesfully switchs Pixhawk 6c modes between RTL and Land !!!

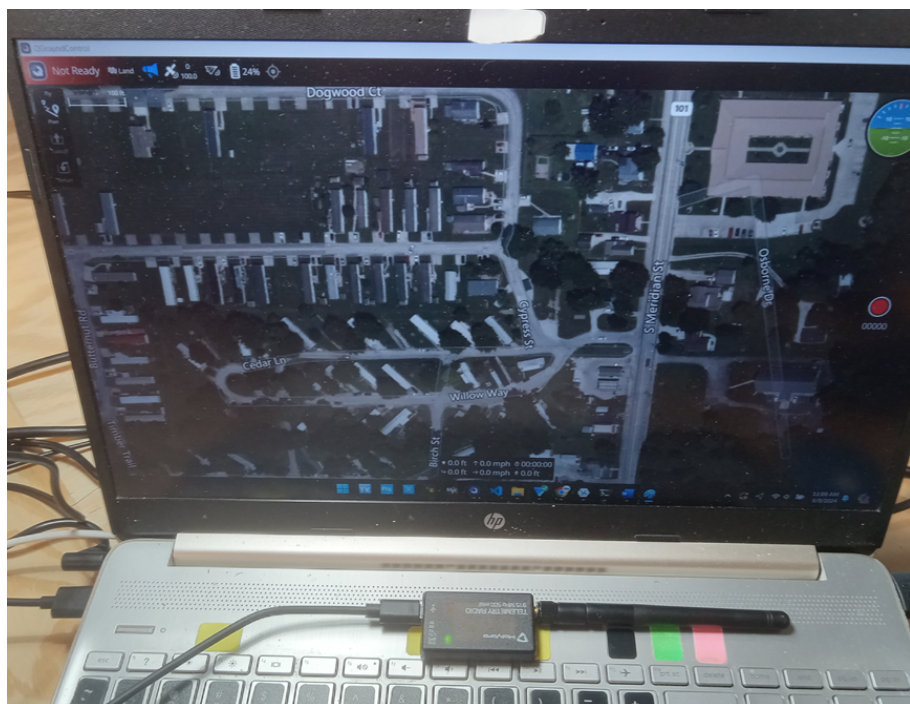
screenshots from win11, connection via holybro telem radios win11<>pix6c



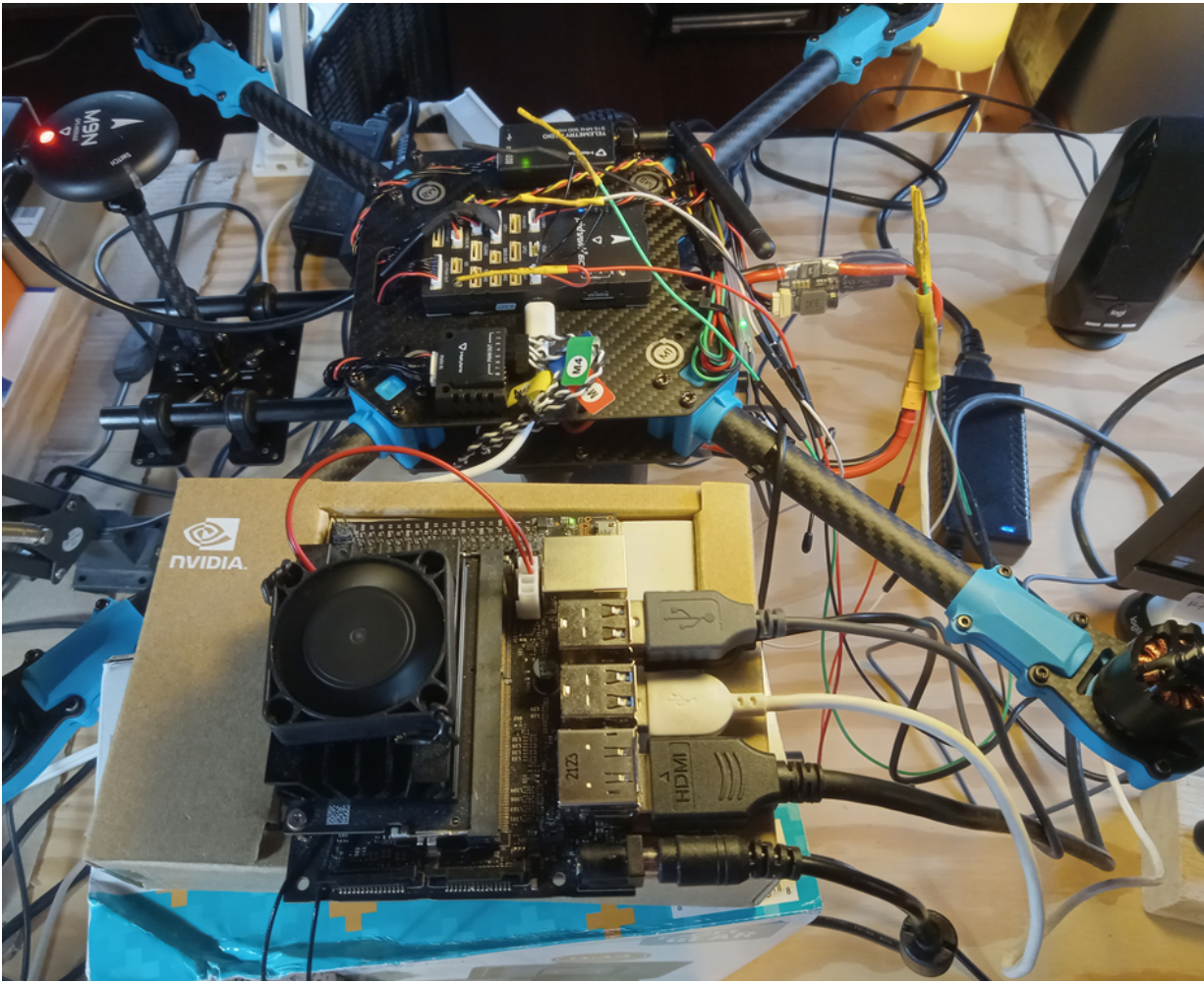
general setup



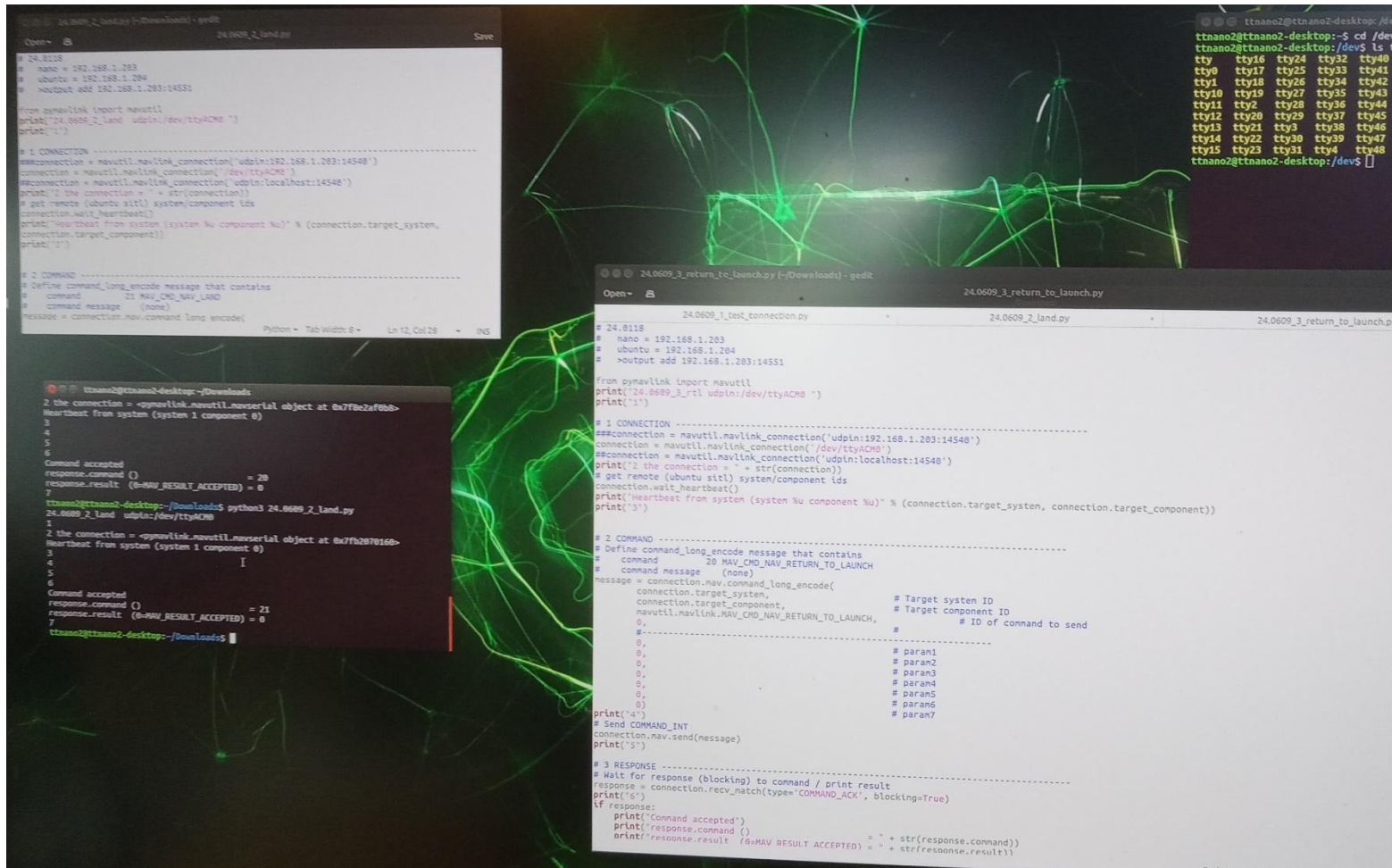
qgc connection by wireless



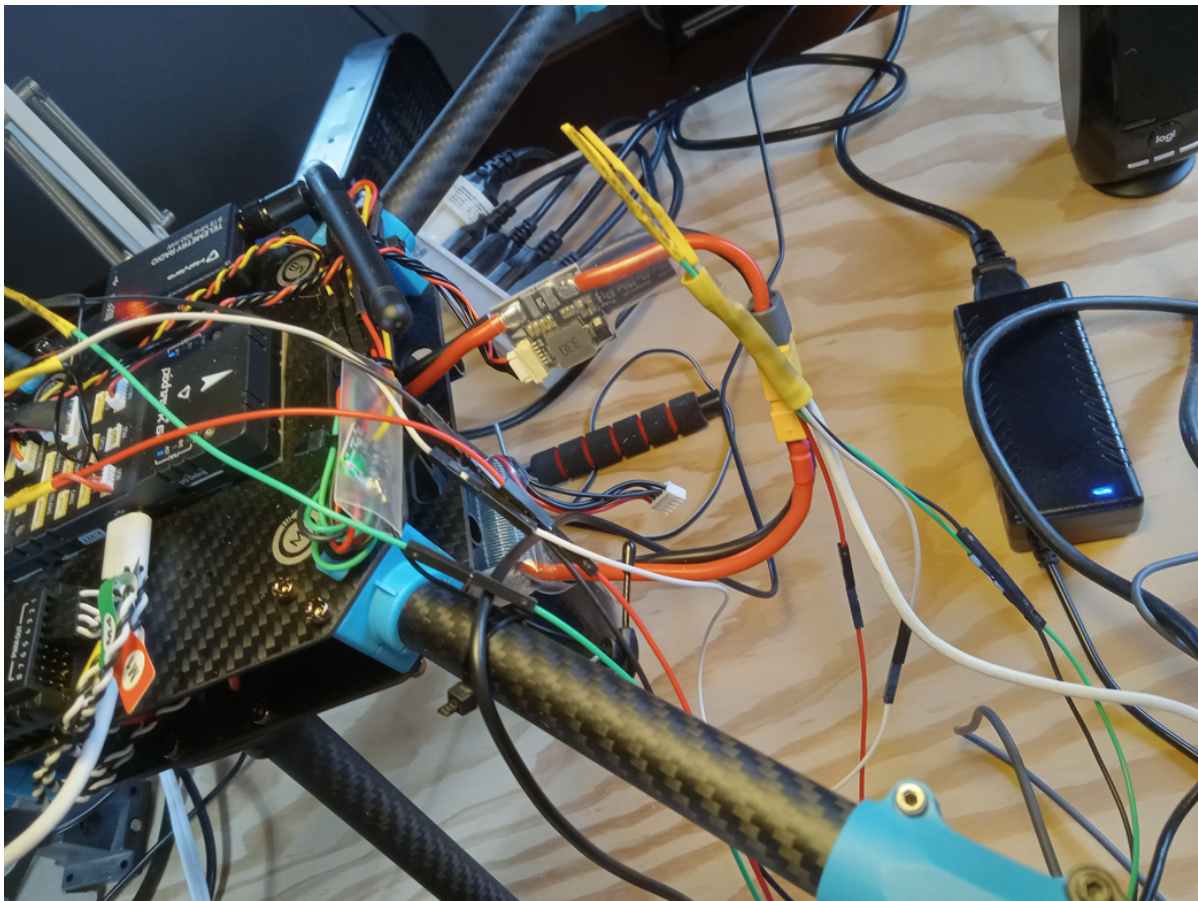
6c powered by battery, jnano connect to ttl_usb



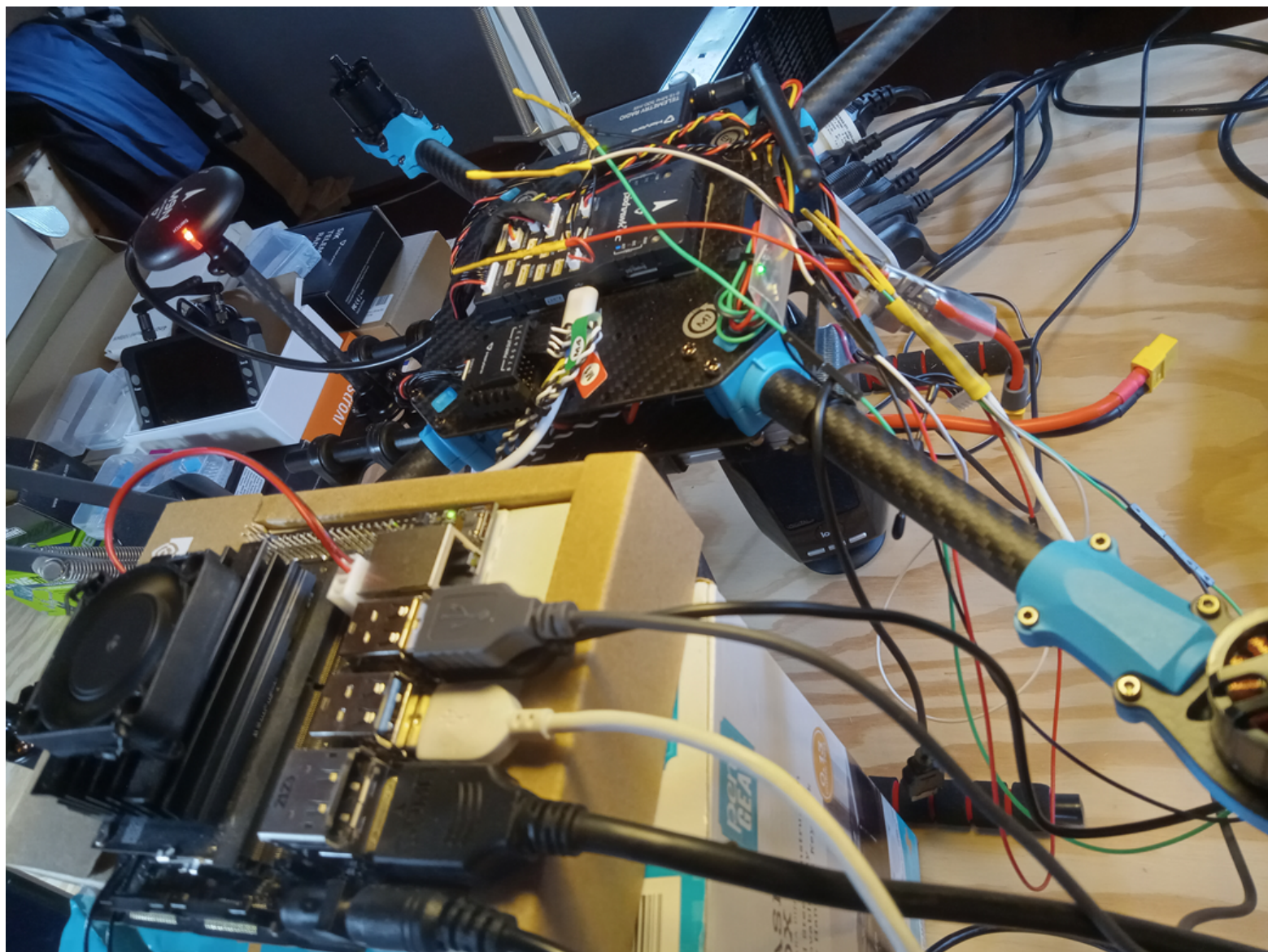
performed land, rtl , back and forth



closeup



can disconnect battery and soemtimes 6c will run on usb_ttl power for a whie... not predictable



try to do same command twice thats a problem

```
ttnano2@ttnano2-desktop: ~/Downloads
response.result (0=MAV_RESULT_ACCEPTED) = 0
7
ttnano2@ttnano2-desktop:~/Downloads$ python3 24.0609_2_land.py
24.0609_2_land udpin:/dev/ttyACM0
1
2 the connection = <pymavlink.mavutil.mavserial object at 0x7fb2070160>
Heartbeat from system (system 1 component 0)
3
4
5
6
Command accepted
response.command () = 21
response.result (0=MAV_RESULT_ACCEPTED) = 0
7
ttnano2@ttnano2-desktop:~/Downloads$ python3 24.0609_2_land.py
24.0609_2_land udpin:/dev/ttyACM0
1
2 the connection = <pymavlink.mavutil.mavserial object at 0x7f8c796160>
Heartbeat from system (system 0 component 0)
3
4
5
```

just cancel and do otehr command.

```
ttnano2@ttnano2-desktop: ~/Downloads
File "/home/ttnano2/.local/lib/python3.6/site-packages/pymavlink/mavutil.py",
line 1009, in recv
ret = self.port.read(n)
File "/home/ttnano2/.local/lib/python3.6/site-packages/serial/serialposix.py",
line 600, in read
if timeout.expired():
File "/home/ttnano2/.local/lib/python3.6/site-packages/serial/serialutil.py",
line 137, in expired
def expired(self):
KeyboardInterrupt
ttnano2@ttnano2-desktop:~/Downloads$ python3 24.0609_3_return_to_launch.py
24.0609_3_rtl udpin:/dev/ttyACM0
1
2 the connection = <pymavlink.mavutil.mavserial object at 0x7fac1410b8>
Heartbeat from system (system 1 component 0)
3
4
5
6
Command accepted
response.command () = 20
response.result (0=MAV_RESULT_ACCEPTED) = 0
7
ttnano2@ttnano2-desktop:~/Downloads$
```

0 terminal 0

```
ttnano2@ttnano2-desktop:/dev$ ls tty*
tty  tty16 tty24 tty32 tty40 tty49 tty57 tty8  ttyp5 ttype
tty0  tty17 tty25 tty33 tty41 tty5  tty58 tty9  ttyp6 ttypf
tty1  tty18 tty26 tty34 tty42 tty50 tty59 ttyACM0 ttyp7 ttyS0
tty10 tty19 tty27 tty35 tty43 tty51 tty6  ttyGS0 ttyp8 ttyS1
tty11 tty2  tty28 tty36 tty44 tty52 tty60 ttyp0  ttyp9 ttyS2
tty12 tty20 tty29 tty37 tty45 tty53 tty61 ttyp1  ttypa ttyS3
tty13 tty21 tty3  tty38 tty46 tty54 tty62 ttyp2  ttypb ttyTHS1
tty14 tty22 tty30 tty39 tty47 tty55 tty63 ttyp3  ttypc ttyTHS2
tty15 tty23 tty31 tty4  tty48 tty56 tty7  ttyp4  ttypd
ttnano2@ttnano2-desktop:/dev$
```

0 TERMINAL 1

```
ttnano2@ttnano2-desktop:~$ cd Do
bash: cd: Do: No such file or directory
ttnano2@ttnano2-desktop:~$ cd Downloads/
ttnano2@ttnano2-desktop:~/Downloads$ python3 24.0609_1_test_connection.py
24.0609_1 udpin:/dev/ttyACM0
1
2 the connection = <pymavlink.mavutil.mavserial object at 0x7f9b4137f0>
Heartbeat from system (system 1 component 0)
3
ttnano2@ttnano2-desktop:~/Downloads$ python3 24.0609_2_land.py
24.0609_2_land udpin:/dev/ttyACM0
1
2 the connection = <pymavlink.mavutil.mavserial object at 0x7faab3e160>
Heartbeat from system (system 1 component 0)
3
4
5
6
Command accepted
response.command () = 21
response.result (0=MAV_RESULT_ACCEPTED) = 0
7
ttnano2@ttnano2-desktop:~/Downloads$ python3 24.0609_2_land.py
24.0609_2_land udpin:/dev/ttyACM0
1
Traceback (most recent call last):
  File "/home/ttnano2/.local/lib/python3.6/site-packages/serial/serialposix.py", line 322, in open
    self.fd = os.open(self.portstr, os.O_RDWR | os.O_NOCTTY | os.O_NONBLOCK)
FileNotFoundError: [Errno 2] No such file or directory: '/dev/ttyACM0'
```

During handling of the above exception, another exception occurred:

Traceback (most recent call last):

```
File "24.0609_2_land.py", line 12, in <module>
    connection = mavutil.mavlink_connection('/dev/ttyACM0')
File "/home/ttnano2/.local/lib/python3.6/site-packages/pymavlink/mavutil.py", line 1829, in mavlink_connection
    force_connected=force_connected)
File "/home/ttnano2/.local/lib/python3.6/site-packages/pymavlink/mavutil.py", line 971, in __init__
    raise e
File "/home/ttnano2/.local/lib/python3.6/site-packages/pymavlink/mavutil.py", line 968, in __init__
    dsrdtr=False, rtscts=False, xonxoff=False)
File "/home/ttnano2/.local/lib/python3.6/site-packages/serial/serialutil.py", line 244, in __init__
    self.open()
File "/home/ttnano2/.local/lib/python3.6/site-packages/serial/serialposix.py", line 325, in open
    raise SerialException(msg.errno, "could not open port {}: {}".format(self._port, msg))
serial.serialutil.SerialException: [Errno 2] could not open port /dev/ttyACM0: [Errno 2] No such file or directory:
'/dev/ttyACM0'
```

```
ttnano2@ttnano2-desktop:~/Downloads$ python3 24.0609_2_land.py
```

```
24.0609_2_land udpin:/dev/ttyACM0
```

```
1
```

```
2 the connection = <pymavlink.mavutil.mavserial object at 0x7f8553b160>
```

```
Heartbeat from system (system 1 component 0)
```

```
3
```

```
4
```

```
5
```

```
6
```

```
Command accepted
```

```
response.command () = 21
```

```
response.result (0=MAV_RESULT_ACCEPTED) = 0
```

```
7
```

```
ttnano2@ttnano2-desktop:~/Downloads$ python3 24.0609_2_land.py
```

```
24.0609_2_land udpin:/dev/ttyACM0
```

```
1
```

```
2 the connection = <pymavlink.mavutil.mavserial object at 0x7f780c9160>
```

```
Heartbeat from system (system 1 component 0)
```

```
3
```

```
4
```

```
5
```

```
6
```

```
Command accepted
```

```
response.command () = 21
```

```
response.result (0=MAV_RESULT_ACCEPTED) = 0
```

```
7
```

```
ttnano2@ttnano2-desktop:~/Downloads$ python3 24.0609_3_return_to_launch.py
```

```
24.0609_3_rtl udpin:/dev/ttyACM0
```

```
1
```

```
2 the connection = <pymavlink.mavutil.mavserial object at 0x7f8e2af0b8>
```

```
Heartbeat from system (system 1 component 0)
```

```
3
```

```
4
```

```
5
```

```
6
```

```
Command accepted
```

```
response.command () = 20
```

```
response.result (0=MAV_RESULT_ACCEPTED) = 0
```

```
7
```

```
ttnano2@ttnano2-desktop:~/Downloads$ python3 24.0609_2_land.py
```

```
24.0609_2_land udpin:/dev/ttyACM0
```

```
1
2 the connection = <pymavlink.mavutil.mavserial object at 0x7fb2070160>
Heartbeat from system (system 1 component 0)
```

```
3
4
5
6
Command accepted
response.command () = 21
response.result (0=MAV_RESULT_ACCEPTED) = 0
```

```
7
ttnano2@ttnano2-desktop:~/Downloads$ python3 24.0609_2_land.py
24.0609_2_land udpin:/dev/ttyACM0
```

```
1
2 the connection = <pymavlink.mavutil.mavserial object at 0x7f8c796160>
Heartbeat from system (system 0 component 0)
```

```
3
4
5
^CTraceback (most recent call last):
  File "24.0609_2_land.py", line 45, in <module>
    response = connection.recv_match(type='COMMAND_ACK', blocking=True)
  File "/home/ttnano2/.local/lib/python3.6/site-packages/pymavlink/mavutil.py", line 519, in recv_match
    m = self.recv_msg()
  File "/home/ttnano2/.local/lib/python3.6/site-packages/pymavlink/mavutil.py", line 476, in recv_msg
    s = self.recv(n)
  File "/home/ttnano2/.local/lib/python3.6/site-packages/pymavlink/mavutil.py", line 1009, in recv
    ret = self.port.read(n)
  File "/home/ttnano2/.local/lib/python3.6/site-packages/serial/serialposix.py", line 600, in read
    if timeout.expired():
  File "/home/ttnano2/.local/lib/python3.6/site-packages/serial/serialutil.py", line 137, in expired
    def expired(self):
```

```
KeyboardInterrupt
ttnano2@ttnano2-desktop:~/Downloads$ python3 24.0609_3_return_to_launch.py
24.0609_3_rtl udpin:/dev/ttyACM0
```

```
1
2 the connection = <pymavlink.mavutil.mavserial object at 0x7fac1410b8>
Heartbeat from system (system 1 component 0)
```

```
3
4
5
6
Command accepted
response.command () = 20
response.result (0=MAV_RESULT_ACCEPTED) = 0
```

```
7
ttnano2@ttnano2-desktop:~/Downloads$ python3 24.0609_3_return_to_launch.py
24.0609_3_rtl udpin:/dev/ttyACM0
```

```
1
2 the connection = <pymavlink.mavutil.mavserial object at 0x7f789a80b8>
Heartbeat from system (system 1 component 0)
```

```
3
4
5
6
```

```

Command accepted
response.command ()          = 20
response.result (0=MAV_RESULT_ACCEPTED) = 0
7
ttnano2@ttnano2-desktop:~/Downloads$ python3 24.0609_3_return_to_launch.py
24.0609_3_rtl udpin:/dev/ttyACM0
1
2 the connection = <pymavlink.mavutil.mavserial object at 0x7f9b5520b8>
Heartbeat from system (system 0 component 0)
3
4
5
^CTraceback (most recent call last):
  File "24.0609_3_return_to_launch.py", line 45, in <module>
    response = connection.recv_match(type='COMMAND_ACK', blocking=True)
  File "/home/ttnano2/.local/lib/python3.6/site-packages/pymavlink/mavutil.py", line 525, in recv_match
    self.select(0.05)
  File "/home/ttnano2/.local/lib/python3.6/site-packages/pymavlink/mavutil.py", line 339, in select
    (rin, win, xin) = select.select([self.fd], [], [], timeout)
KeyboardInterrupt
ttnano2@ttnano2-desktop:~/Downloads$ python3 24.0609_2_land.py
24.0609_2_land udpin:/dev/ttyACM0
1
2 the connection = <pymavlink.mavutil.mavserial object at 0x7f7b076160>
Heartbeat from system (system 1 component 0)
3
4
5
6
Command accepted
response.command ()          = 21
response.result (0=MAV_RESULT_ACCEPTED) = 0
7
ttnano2@ttnano2-desktop:~/Downloads$

```

1 24.0609_1_test_connection.py

```

from pymavlink import mavutil
print("24.0609_1 udpin:/dev/ttyACM0 ")
print("1")

# 1 CONNECTION -----
###connection = mavutil.mavlink_connection('udpin:192.168.1.203:14540')
connection = mavutil.mavlink_connection('/dev/ttyACM0')
##connection = mavutil.mavlink_connection('udpin:localhost:14540')
print("2 the connection = " + str(connection))
# get remote (ubuntu sitl) system/component ids
connection.wait_heartbeat()
print("Heartbeat from system (system %u component %u)" % (connection.target_system, connection.target_component))
print("3")

```

2 24.0609_2_land.py

```
# 24.0118
# nano = 192.168.1.203
# ubuntu = 192.168.1.204
# >output add 192.168.1.203:14551

from pymavlink import mavutil
print("24.0609_2_land udpin:/dev/ttyACM0 ")
print("1")

# 1 CONNECTION -----
###connection = mavutil.mavlink_connection('udpin:192.168.1.203:14540')
connection = mavutil.mavlink_connection('/dev/ttyACM0')
##connection = mavutil.mavlink_connection('udpin:localhost:14540')
print("2 the connection = " + str(connection))
# get remote (ubuntu sitl) system/component ids
connection.wait_heartbeat()
print("Heartbeat from system (system %u component %u)" % (connection.target_system, connection.target_component))
print("3")

# 2 COMMAND -----
# Define command_long_encode message that contains
# command      21 MAV_CMD_NAV_LAND
# command message (none)
message = connection.mav.command_long_encode(
    connection.target_system,      # Target system ID
    connection.target_component,    # Target component ID
    mavutil.mavlink.MAV_CMD_NAV_LAND, # ID of command to send
    0,                               #
    #-----
    0,                               # param1
    0,                               # param2
    0,                               # param3
    0,                               # param4
    0,                               # param5
    0,                               # param6
    0)                               # param7
print("4")
# Send COMMAND_INT
connection.mav.send(message)
print("5")

# 3 RESPONSE -----
# Wait for response (blocking) to command / print result
response = connection.recv_match(type='COMMAND_ACK', blocking=True)
print("6")
if response:
    print("Command accepted")
    print("response.command ()          = " + str(response.command))
    print("response.result (0=MAV_RESULT_ACCEPTED) = " + str(response.result))
else:
```

```
print("no response")
print("7")
```

3 24.0609_3_return_to_launch.py

```
# 24.0118
# nano = 192.168.1.203
# ubuntu = 192.168.1.204
# >output add 192.168.1.203:14551

from pymavlink import mavutil
print("24.0609_3_rtl udpin:/dev/ttyACM0 ")
print("1")

# 1 CONNECTION -----
###connection = mavutil.mavlink_connection('udpin:192.168.1.203:14540')
connection = mavutil.mavlink_connection('/dev/ttyACM0')
##connection = mavutil.mavlink_connection('udpin:localhost:14540')
print("2 the connection = " + str(connection))
# get remote (ubuntu sitl) system/component ids
connection.wait_heartbeat()
print("Heartbeat from system (system %u component %u)" % (connection.target_system, connection.target_component))
print("3")

# 2 COMMAND -----
# Define command_long_encode message that contains
# command      20 MAV_CMD_NAV_RETURN_TO_LAUNCH
# command message  (none)
message = connection.mav.command_long_encode(
    connection.target_system,          # Target system ID
    connection.target_component,        # Target component ID
    mavutil.mavlink.MAV_CMD_NAV_RETURN_TO_LAUNCH, # ID of command to send
    0,                                  #
    #-----
    0,                                  # param1
    0,                                  # param2
    0,                                  # param3
    0,                                  # param4
    0,                                  # param5
    0,                                  # param6
    0)                                  # param7
print("4")
# Send COMMAND_INT
connection.mav.send(message)
print("5")

# 3 RESPONSE -----
# Wait for response (blocking) to command / print result
response = connection.recv_match(type='COMMAND_ACK', blocking=True)
print("6")
```

```
if response:
    print("Command accepted")
    print("response.command ()          = " + str(response.command))
    print("response.result (0=MAV_RESULT_ACCEPTED) = " + str(response.result))
else:
    print("no response")
print("7")
```