



AVIDYNE

Skytrax-100B Configuration

RS-232 Port Configuration, Baud Rate & Protocol Settings

Introduction

This presentation will illustrate the necessary Input/Output configurations of the RS-232 serial ports of the Skytrax-100B

This procedure is discussed in Section 3.7.6, *Configuration and Verification Interface*, of the Skytrax-100B Installation Manual



SKYTRAX_SERIES_INSTALLATION_MANUAL 600-00335-000_Rev 01.pdf

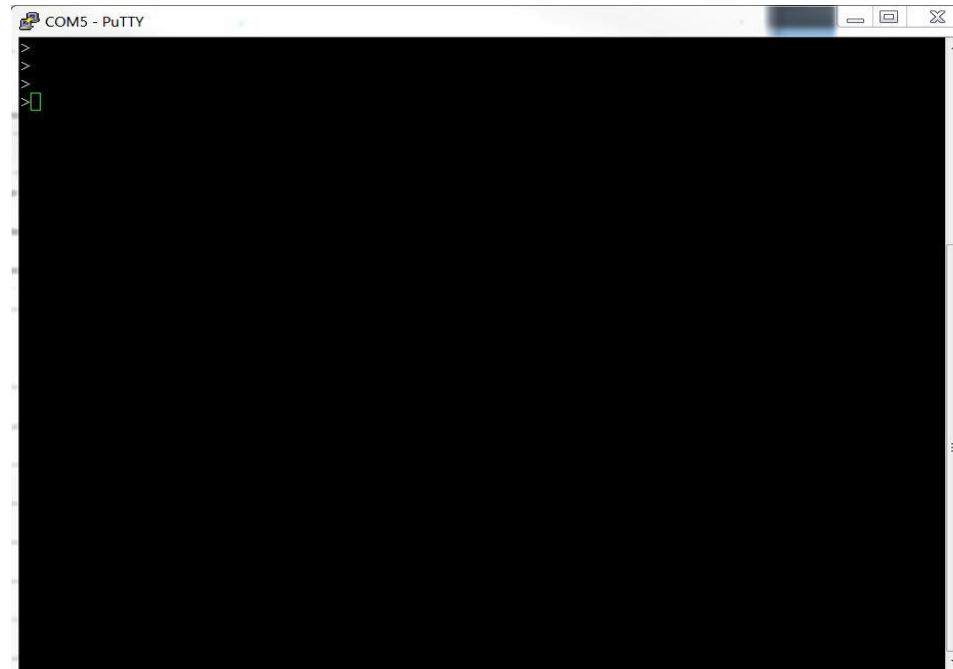
“PuTTY ← → Skytrax-100B” Connection

- Once you have Opened your Serial Interface Program.... “PuTTY”
- Power on the Skytrax-100B and wait for the unit to complete the boot sequence.
- Inside the dialog box window, you should see the message "Enter link msg to connect"
(this may take up to 20 seconds to appear after starting PuTTY and the SKYTRAX100B).



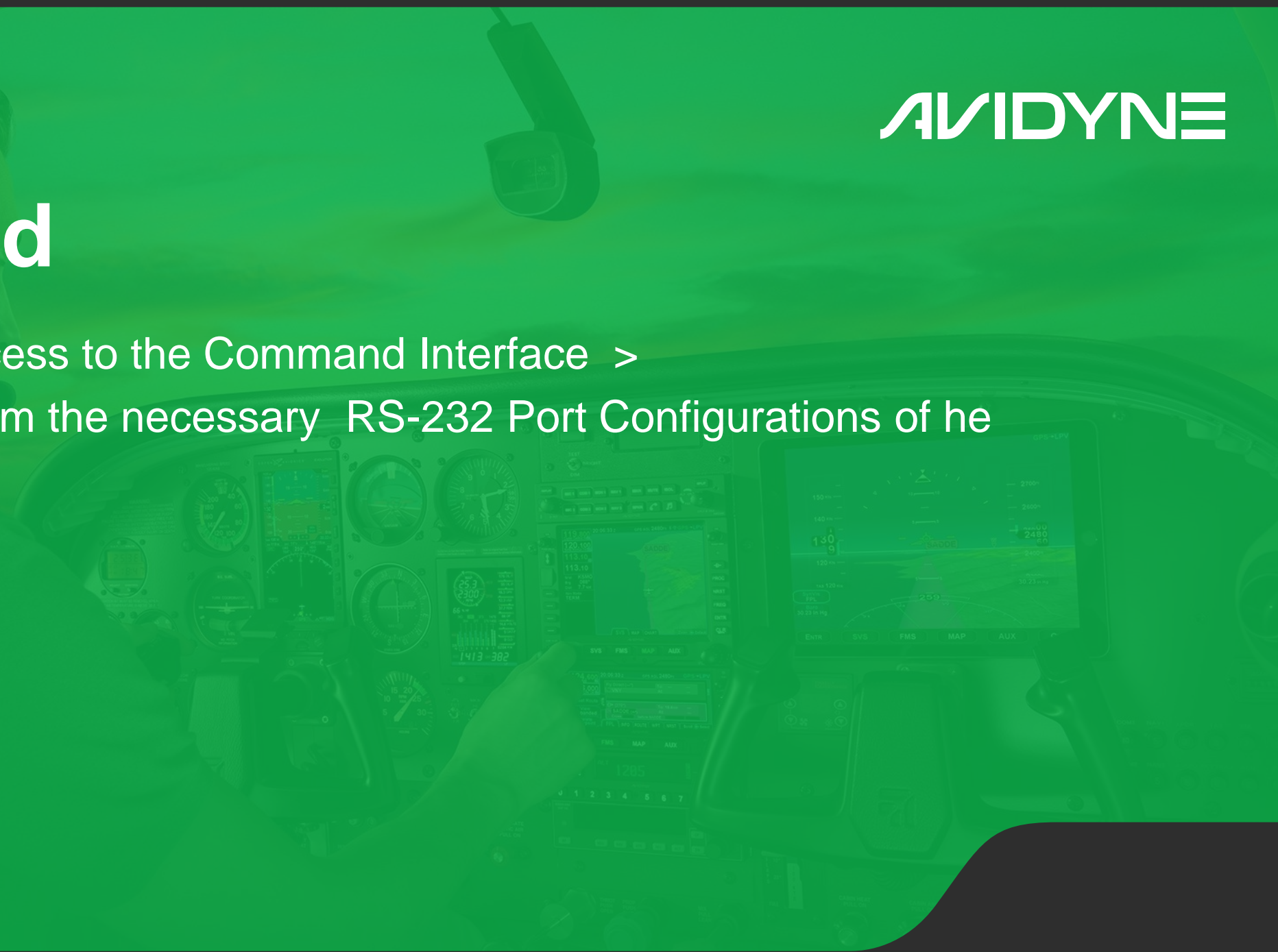
“PuTTY \leftrightarrow Skytrax-100B” Connection

- You must have a clear field after the “Enter link msg to connect” before quickly typing in “**command**” for Command Interface access.
- Once the link is established the PuTTY Screen will display a > “**prompt**” for each press of the enter key.



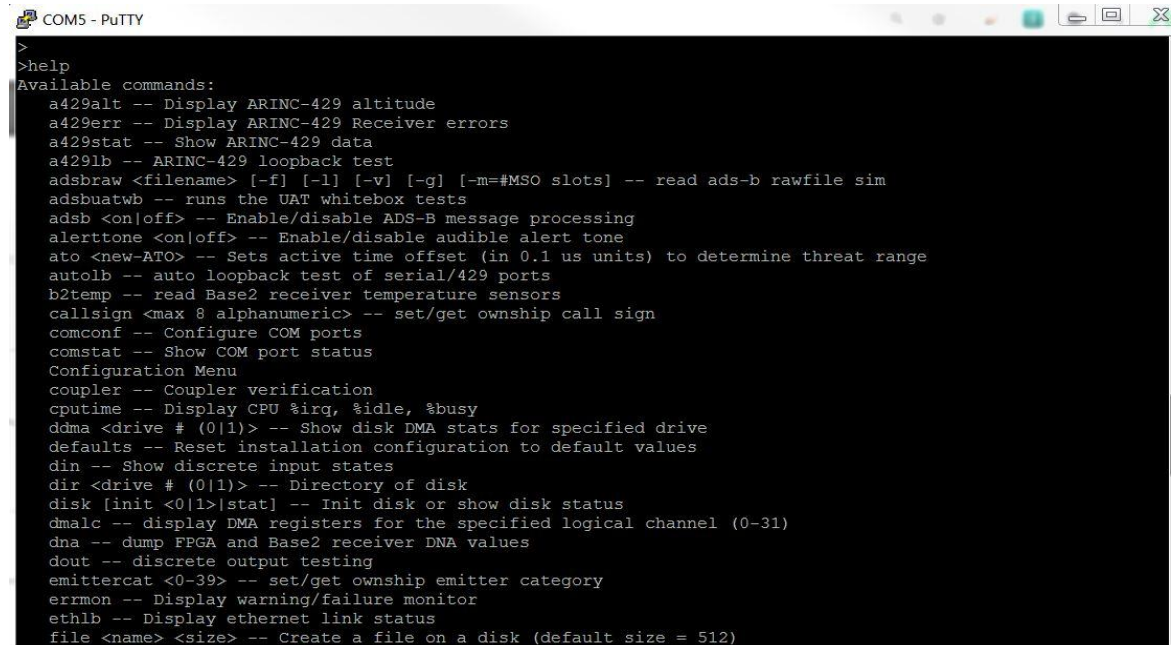
Command

Once you have access to the Command Interface >
you can now perform the necessary RS-232 Port Configurations of the
Skytrax-100B.



help

- A good place to start is to type
> **help**
- This will list the available commands in the Command Interface Menu.
[Not all command are applicable to the Skytrax-100B]

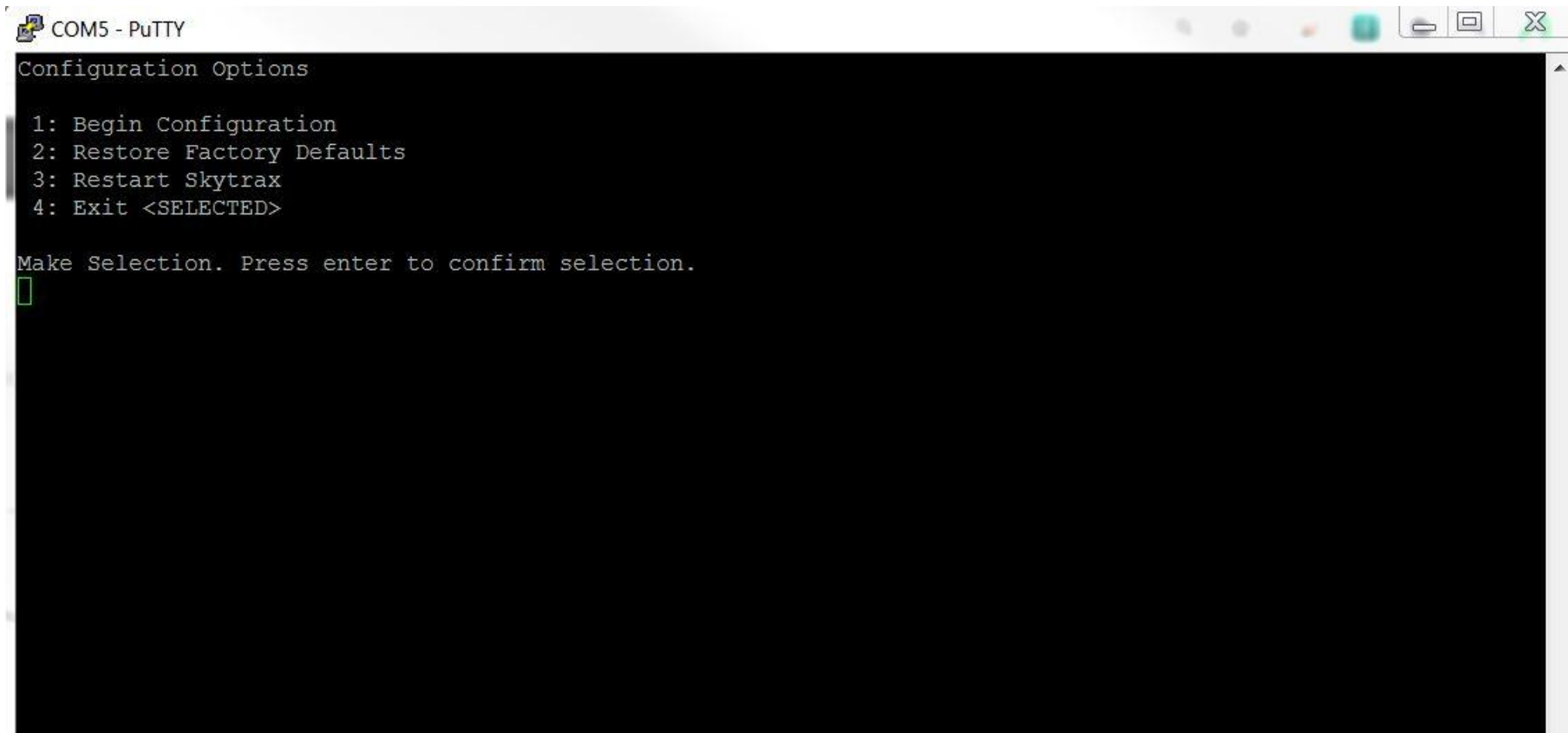


```
>
>help
Available commands:
a429alt -- Display ARINC-429 altitude
a429err -- Display ARINC-429 Receiver errors
a429stat -- Show ARINC-429 data
a429lb -- ARINC-429 loopback test
adsbraw <filename> [-f] [-l] [-v] [-g] [-m=#MSO slots] -- read ads-b rawfile sim
adsbuatwb -- runs the UAT whitebox tests
adsb <on|off> -- Enable/disable ADS-B message processing
alerttone <on|off> -- Enable/disable audible alert tone
ato <new-ATO> -- Sets active time offset (in 0.1 us units) to determine threat range
autolb -- auto loopback test of serial/429 ports
b2temp -- read Base2 receiver temperature sensors
callsign <max 8 alphanumeric> -- set/get ownship call sign
comconf -- Configure COM ports
comstat -- Show COM port status
Configuration Menu
coupler -- Coupler verification
cputime -- Display CPU %irq, %idle, %busy
ddma <drive # (0|1)> -- Show disk DMA stats for specified drive
defaults -- Reset installation configuration to default values
din -- Show discrete input states
dir <drive # (0|1)> -- Directory of disk
disk [init <0|1>|stat] -- Init disk or show disk status
dmac -- display DMA registers for the specified logical channel (0-31)
dna -- dump FPGA and Base2 receiver DNA values
dout -- discrete output testing
emittercat <0-39> -- set/get ownship emitter category
errmon -- Display warning/failure monitor
ethlb -- Display ethernet link status
file <name> <size> -- Create a file on a disk (default size = 512)
```


config

- The easiest way to perform the basic Capstone configurations needed by the Skytrax-100B is to

type > **config**




```
COM5 - PuTTY
Configuration Options
1: Begin Configuration
2: Restore Factory Defaults
3: Restart Skytrax
4: Exit <SELECTED>

Make Selection. Press enter to confirm selection.
█
```

Begin Configuration >1

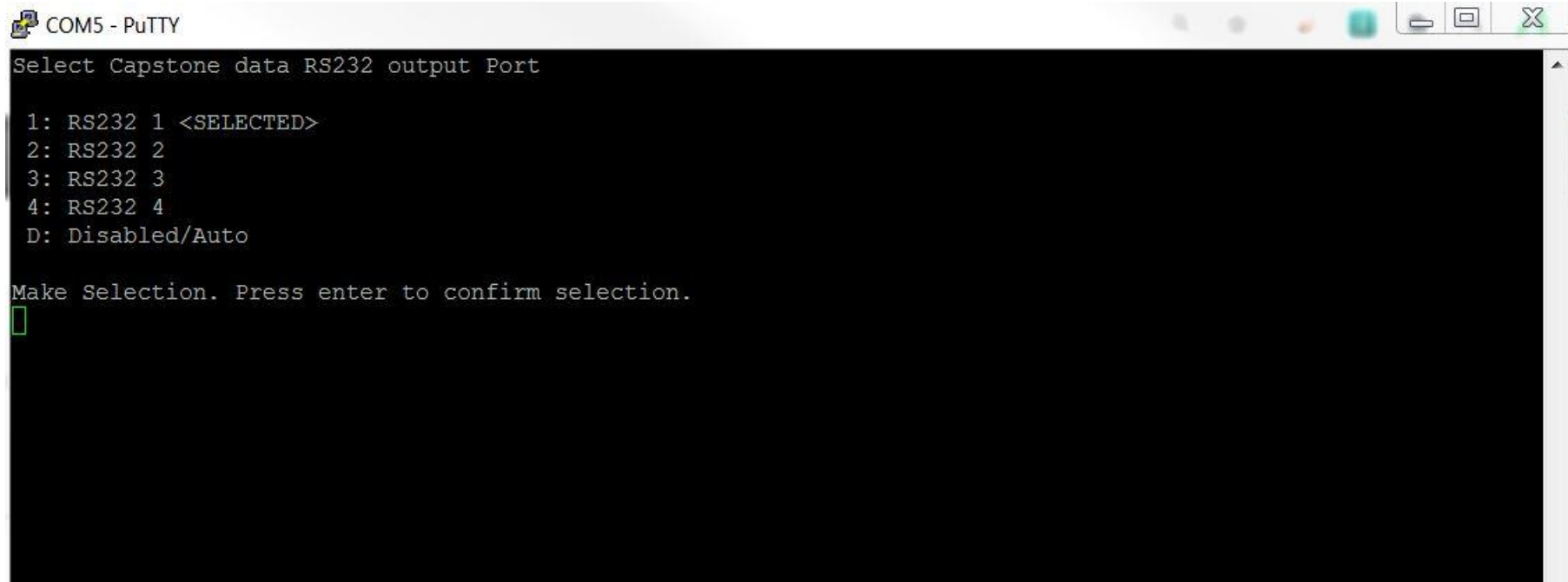
- Type > 1 to Begin Configuration...
1: Begin Configuration <SELECTED>
Hit Enter.....



```
COM5 - PuTTY
Configuration Options
1: Begin Configuration <SELECTED>
2: Restore Factory Defaults
3: Restart Skytrax
4: Exit
Make Selection. Press enter to confirm selection.
█
```


Select Capstone RS-232 Output Port

- Type > 1 to Select...
1: RS232 1 <SELECTED>
Hit Enter.....



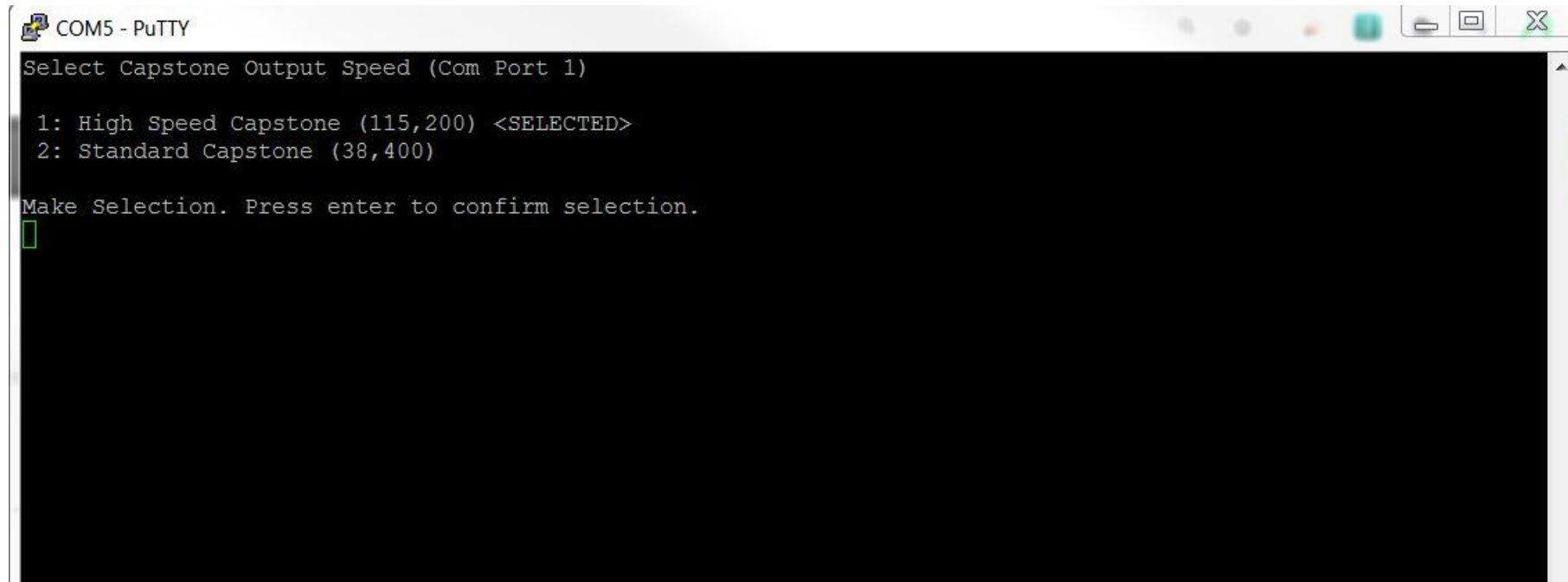
```
COM5 - PuTTY
Select Capstone data RS232 output Port

1: RS232 1 <SELECTED>
2: RS232 2
3: RS232 3
4: RS232 4
D: Disabled/Auto

Make Selection. Press enter to confirm selection.
█
```

Select Capstone Output Speed

- Type > 1 to Select...
1: High Speed Capstone (115,200) <SELECTED>
Hit Enter.....



```
COM5 - PuTTY
Select Capstone Output Speed (Com Port 1)

1: High Speed Capstone (115,200) <SELECTED>
2: Standard Capstone (38,400)

Make Selection. Press enter to confirm selection.
█
```

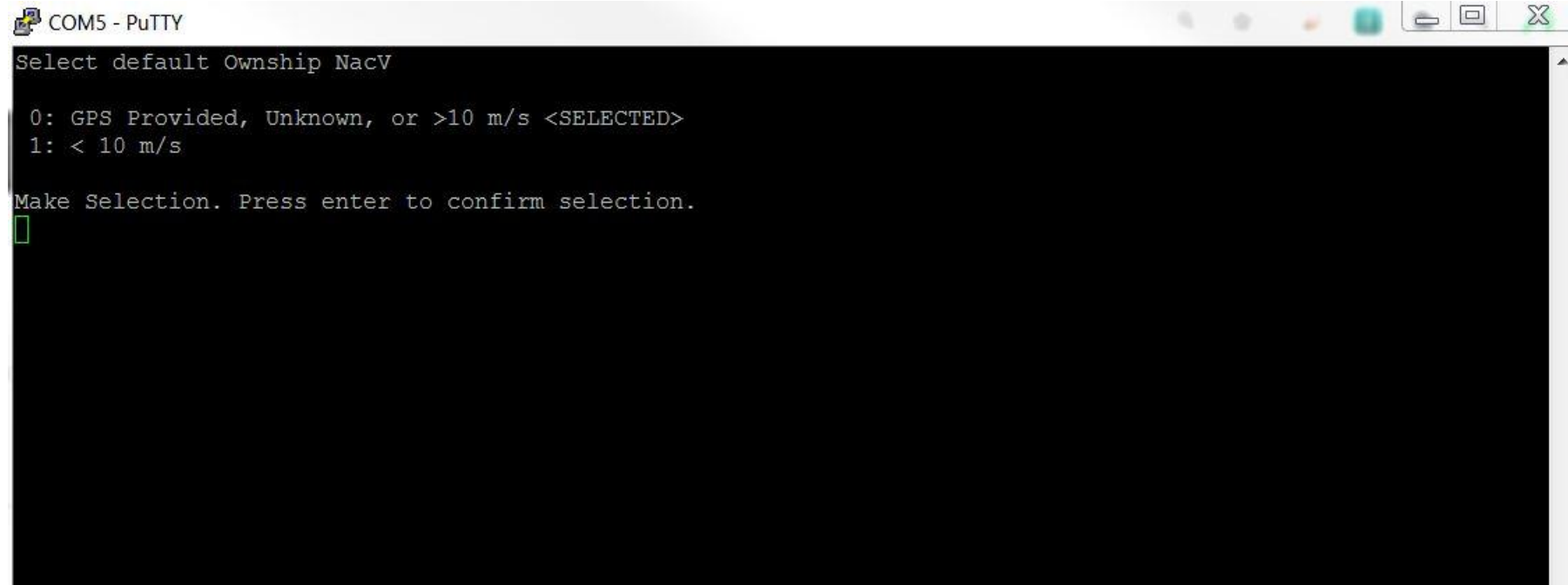
Enter ICAO Code

- Enter the 6 Digit Hex ICAO Code from the Aircraft Registration
Ignore the 0x, It is simply a memory location marker



Select Default Ownship NacV

- Type > **0** to Select
0: GPS Provided, Unknown, or >10 m/s <SELECTED>
Hit Enter



```
COM5 - PuTTY
Select default Ownship NacV

0: GPS Provided, Unknown, or >10 m/s <SELECTED>
1: < 10 m/s

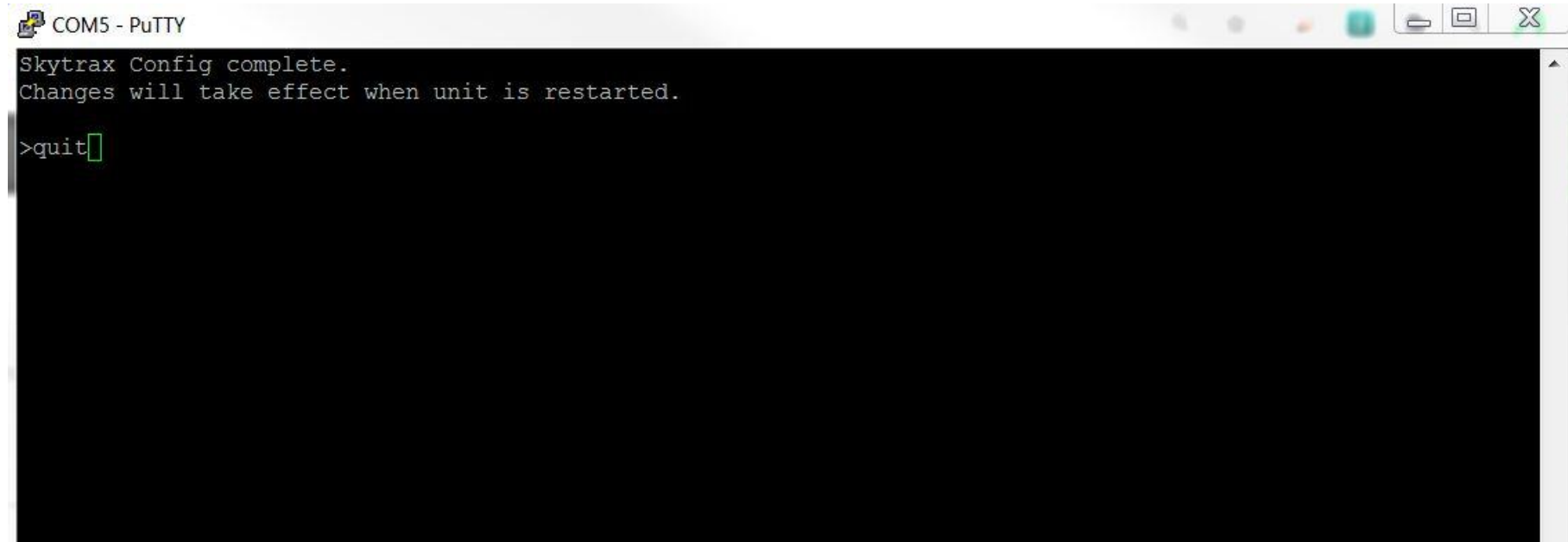
Make Selection. Press enter to confirm selection.
█
```


Config Complete

- Changes will take effect when unit is restarted.

Type > **quit**

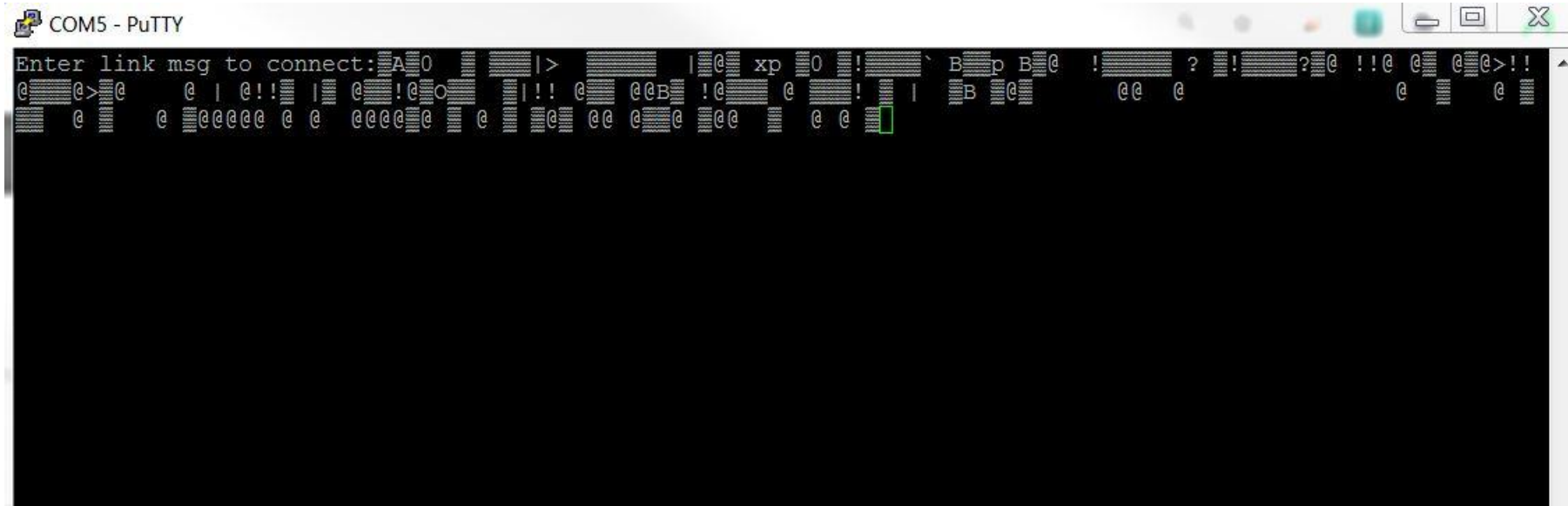
Hit Enter



```
COM5 - PuTTY
Skytrax Config complete.
Changes will take effect when unit is restarted.
>quit
```

Exit Configuration

- The Unit will Exit configuration Mode and once again display “Enter link msg to connect”.
- Cycle Power to the Skytrax-100B and remain off for at least 60 Seconds for the new configuration changes to take effect.
- The interface will display noise when the Skytrax is turned off.



Restore Power to the Skytrax-100B

Insure that all units that the Skytrax-100B is receiving data from are also on and configured such as an IFD-5xx/4xx for GPS Position, and an Altitude Encoder.

Re-establish communications with the Skytrax-100B ...

“Enter link msg to connect :” type... command ...

>

>

>

Comstat

- To view the present status of the Com Port settings type...
> **comstat**
- This will list the five (5) RS-232 Com Ports and their present configurations.
- If the Skytrax Rx Ports Self Detected the IFD-5xx/4xx GPS Data and Altitude Encoder Data the status of the COM Ports should look something as follows.....




```
COM port status
```

Port	RX baud	RX handler	TX baud	TX handler
1	115200	CapstoneRx	115200	Capstone
2	38400	Garmin ADSB+ GPS	38400	Garmin ADSB+ GPS
3	9600	Icarus Alt	9600	Discover
4	38400	Discover	38400	Discover
5	115200	Command	115200	Command

Comconfig

- To MANUALLY configure the com port settings type...
> **comconfig**
- This will list the five (5) RS-232 Com Ports and their present configurations.



```
COM5 - PuTTY
COM port status

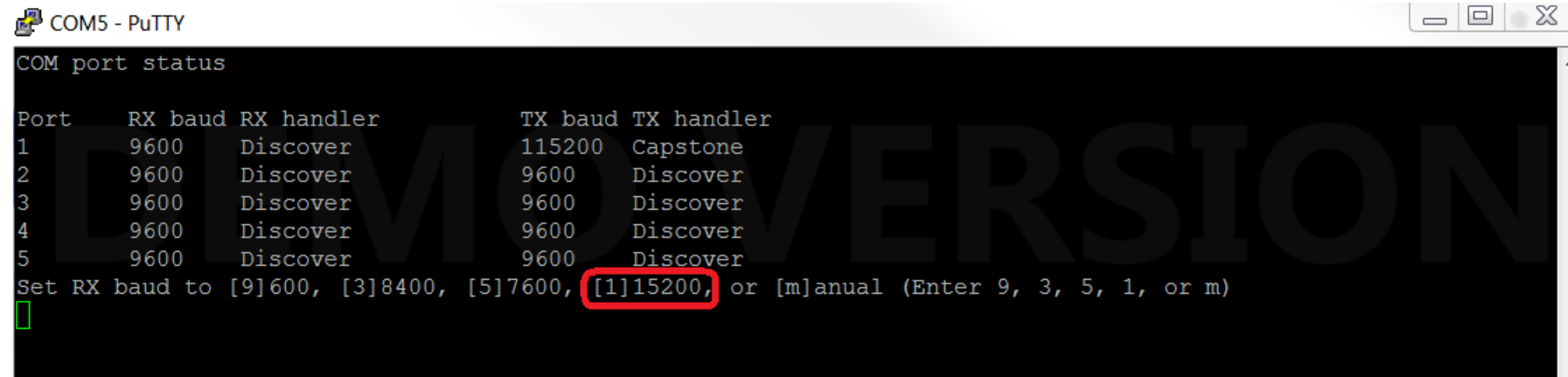
Port:  RX baud RX handler      TX baud TX handler
1      9600   Discover          115200 Capstone
2      9600   Discover          9600    Discover
3      9600   Discover          9600    Discover
4      9600   Discover          9600    Discover
5      9600   Discover          9600    Discover
Enter X to exit, or a number to change that ports configuration

```

- Type the number of the port you wish to configure.....
> 1

Set Port 1 RX Baud Rate

- > 1 for 115200



```
COM5 - PuTTY
COM port status

Port    RX baud RX handler    TX baud TX handler
1       9600   Discover       115200  Capstone
2       9600   Discover       9600    Discover
3       9600   Discover       9600    Discover
4       9600   Discover       9600    Discover
5       9600   Discover       9600    Discover
Set RX baud to [9]600, [3]8400, [5]7600, [1]115200, or [m]anual (Enter 9, 3, 5, 1, or m)
█
```

Set Port 1 RX Protocol

- > 0 for CapstoneRx

```
COM5 - PuTTY
COM port status

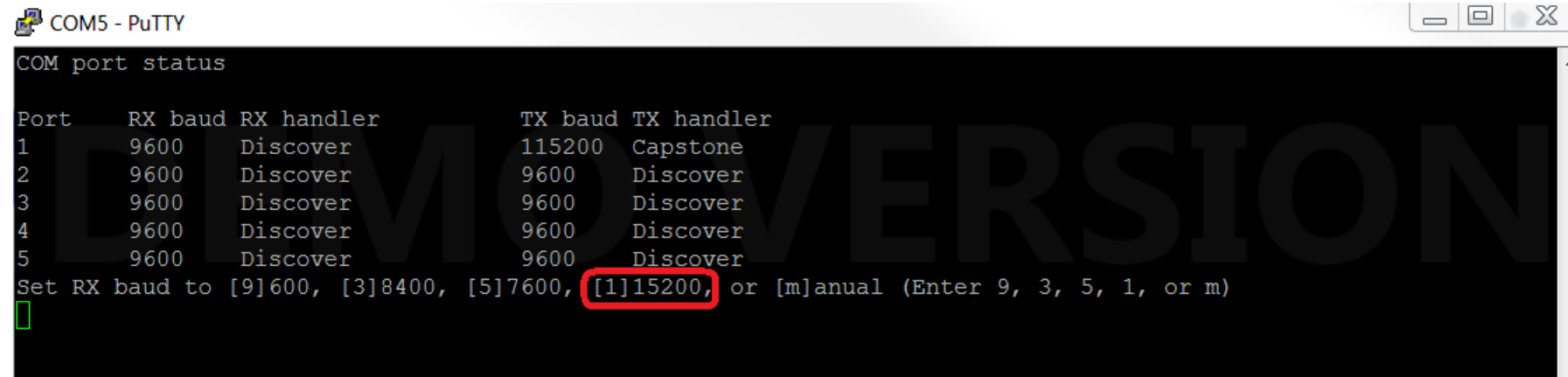
Port      RX baud RX handler      TX baud TX handler
1         115200 Discover      115200 Capstone
2          9600 Discover      9600    Discover
3          9600 Discover      9600    Discover
4          9600 Discover      9600    Discover
5          9600 Discover      9600    Discover

RX protocol:
A Discover
B NONE
C Raw
D Monitor
E ActiveRaw
F Cvi
G Challenge
H 3rdParty
I Command
J Maui GPS
K Garmin GPS
L Garmin ADSB+ GPS
M Chargin
N Capstone
O CapstoneRx
P Icarus Alt
Q Shadin RMS
R Shadin G/S/Z
S Apollo Alt

```

Set Port 1 TX Baud Rate

- > 1 for 115200

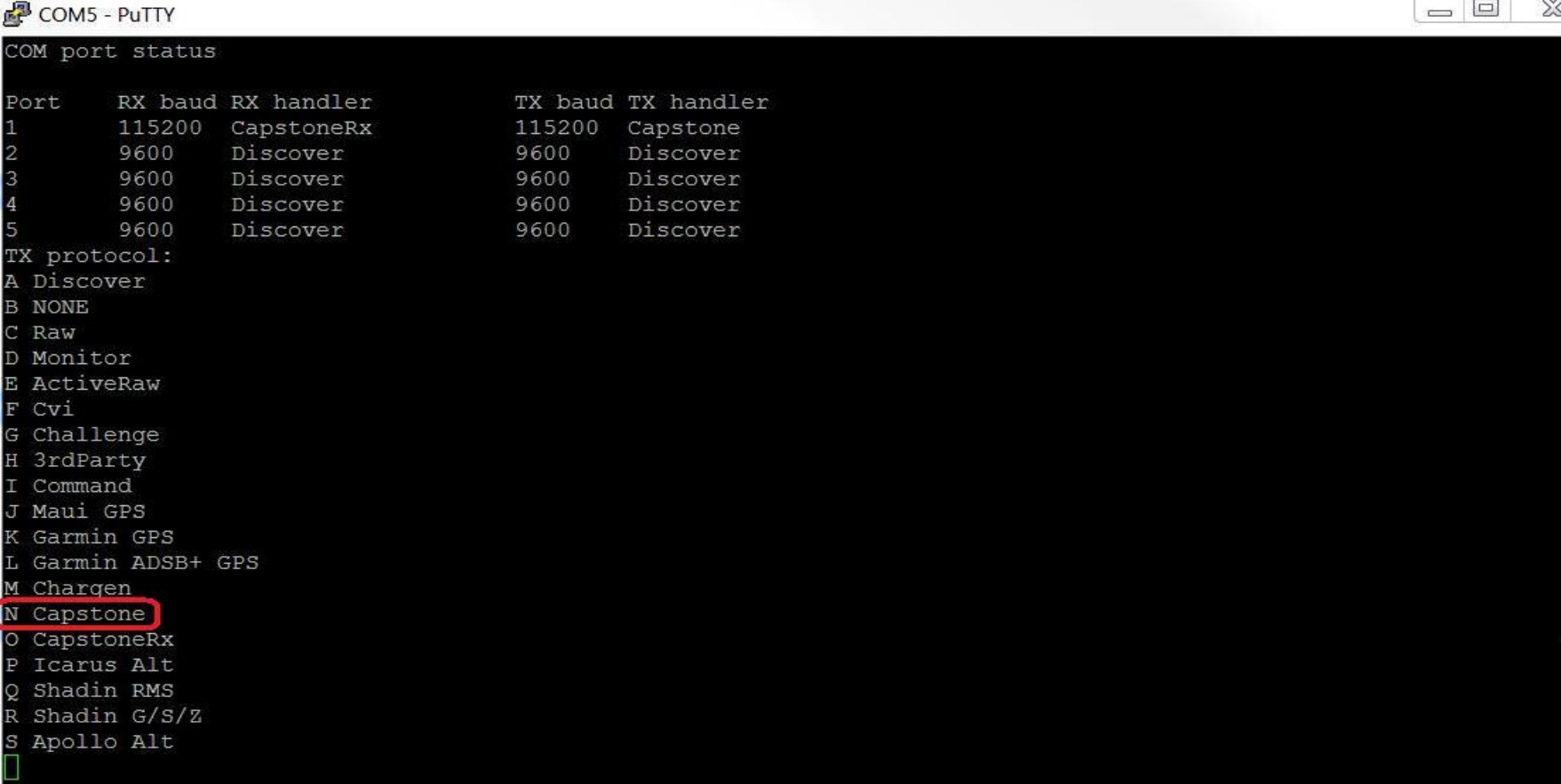


```
COM5 - PuTTY
COM port status

Port   RX baud RX handler   TX baud TX handler
1      9600   Discover     115200 Capstone
2      9600   Discover     9600    Discover
3      9600   Discover     9600    Discover
4      9600   Discover     9600    Discover
5      9600   Discover     9600    Discover
Set RX baud to [9]600, [3]8400, [5]7600, [1]115200, or [m]anual (Enter 9, 3, 5, 1, or m)
█
```


Set Port 1 TX Protocol

- > N for Capstone



```
COM5 - PuTTY
COM port status

Port      RX baud RX handler      TX baud TX handler
1         115200 CapstoneRx      115200 Capstone
2          9600 Discover      9600 Discover
3          9600 Discover      9600 Discover
4          9600 Discover      9600 Discover
5          9600 Discover      9600 Discover

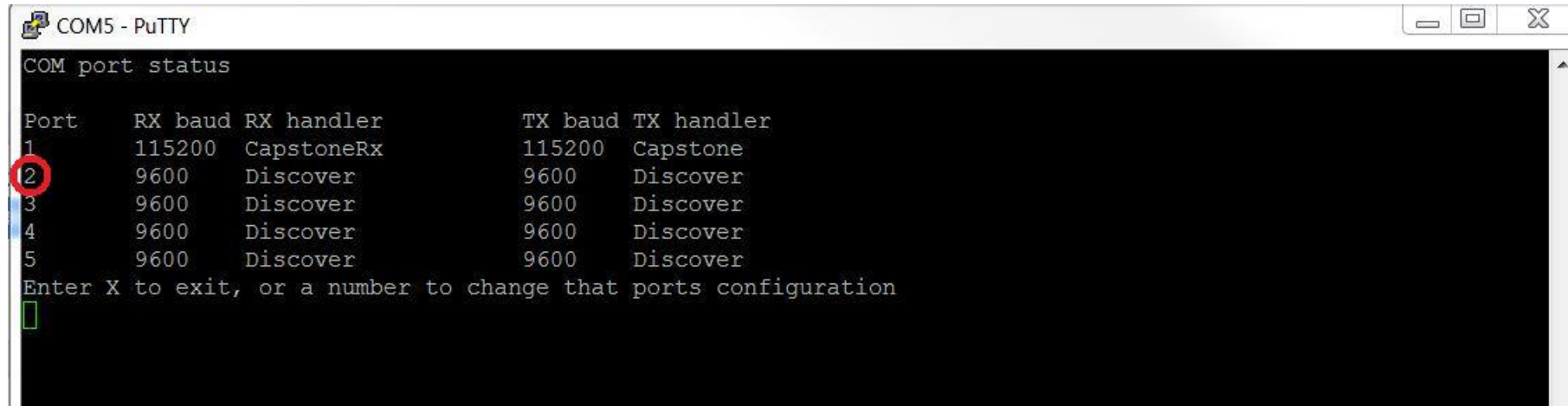
TX protocol:
A Discover
B NONE
C Raw
D Monitor
E ActiveRaw
F Cvi
G Challenge
H 3rdParty
I Command
J Maui GPS
K Garmin GPS
L Garmin ADSB+ GPS
M Chargin
N Capstone
O CapstoneRx
P Icarus Alt
Q Shadin RMS
R Shadin G/S/Z
S Apollo Alt

```

Comconfig [Port 2]

- Type the number of the port you wish to configure.....

> 2



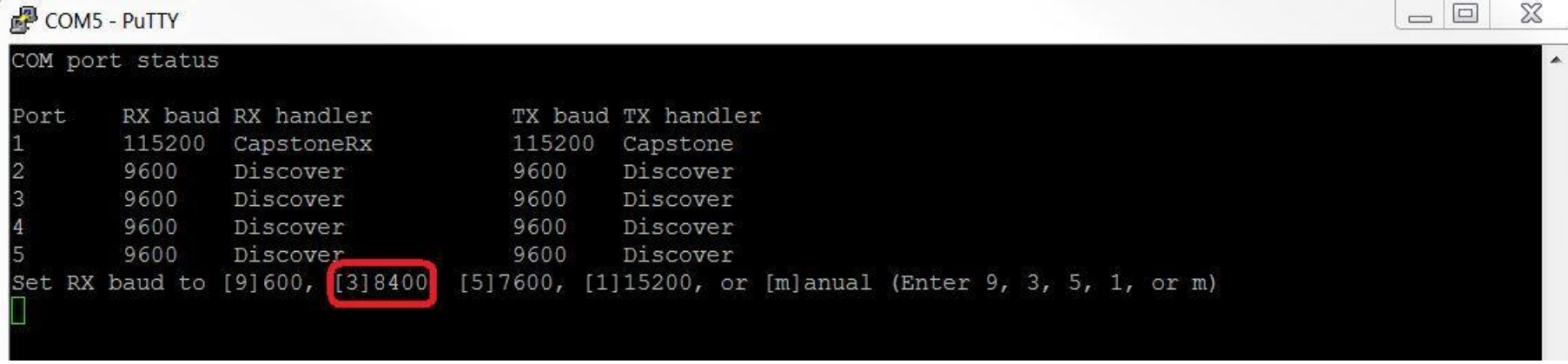
```
COM5 - PuTTY
COM port status

Port    RX baud RX handler    TX baud TX handler
1       115200 CapstoneRx    115200 Capstone
2       9600   Discover      9600   Discover
3       9600   Discover      9600   Discover
4       9600   Discover      9600   Discover
5       9600   Discover      9600   Discover

Enter X to exit, or a number to change that ports configuration
█
```

Set Port 2 RX Baud Rate

- > 3 for 38400

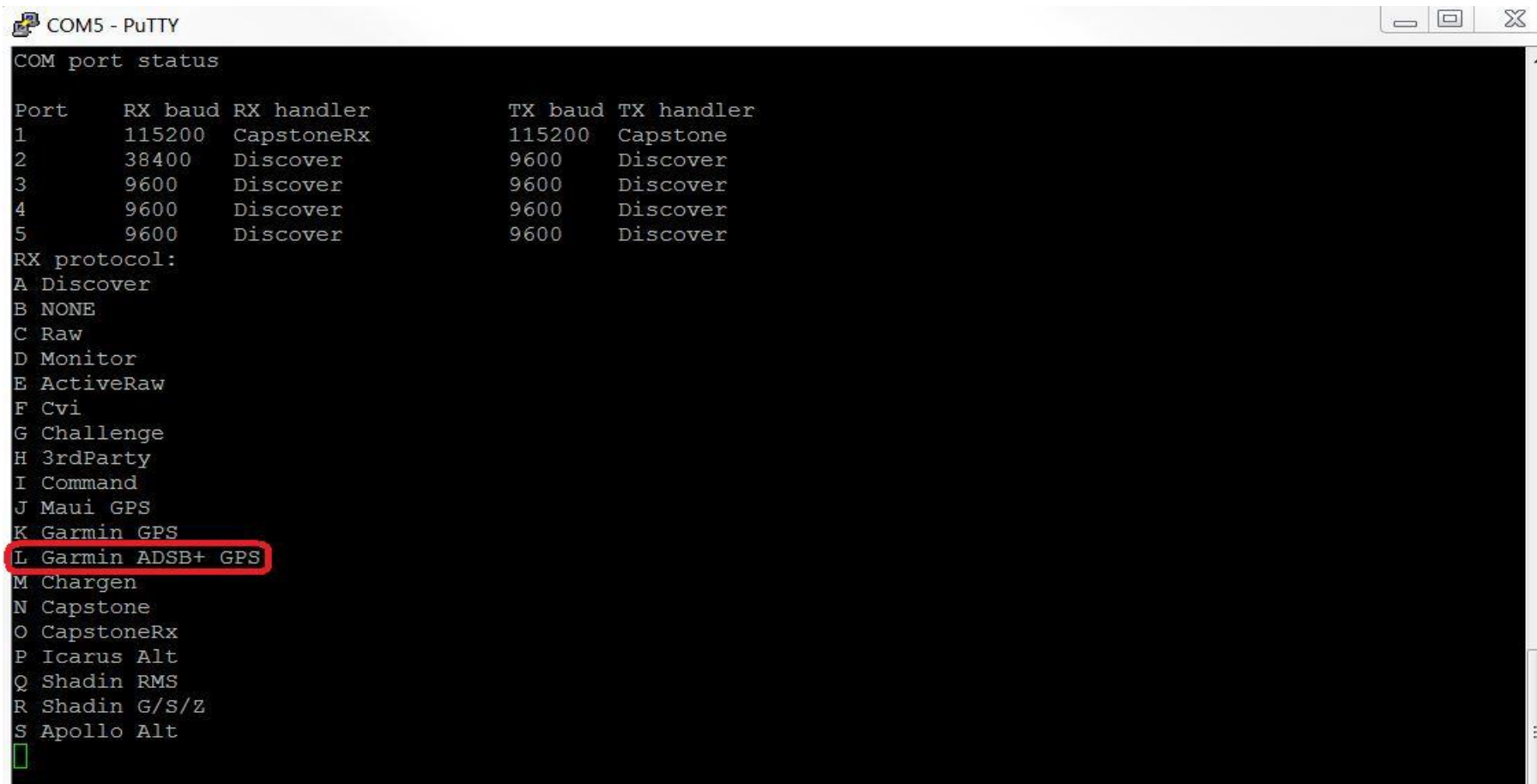


```
COM5 - PuTTY
COM port status

Port    RX baud RX handler    TX baud TX handler
1       115200 CapstoneRx    115200 Capstone
2        9600 Discover      9600 Discover
3        9600 Discover      9600 Discover
4        9600 Discover      9600 Discover
5        9600 Discover      9600 Discover
Set RX baud to [9]600, [3]8400 [5]7600, [1]15200, or [m]anual (Enter 9, 3, 5, 1, or m)
█
```

Set Port 2 RX Protocol

- > L for Garmin ADSB+ GPS



```
COM5 - PuTTY
COM port status

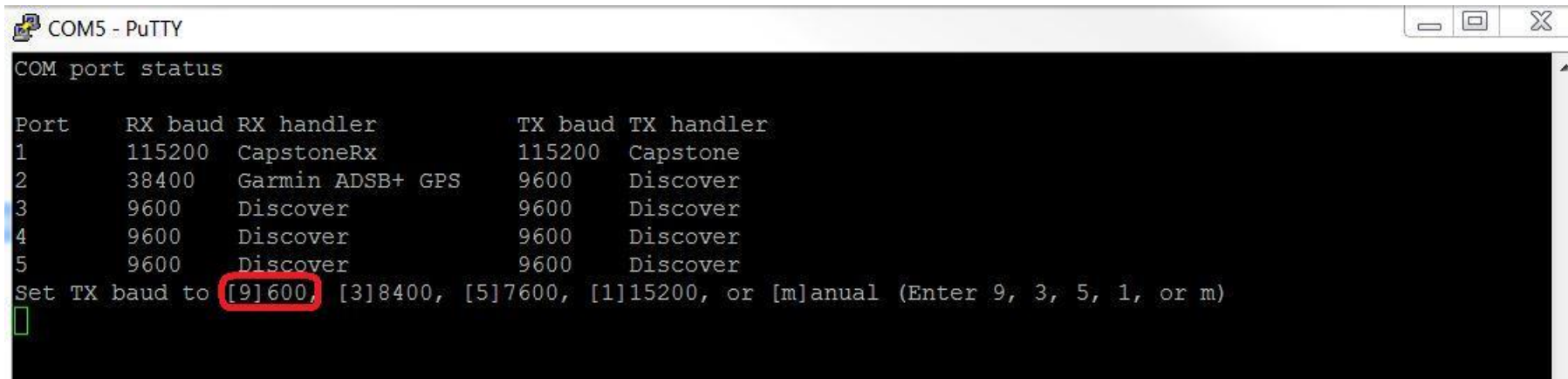
Port    RX baud RX handler    TX baud TX handler
1       115200 CapstoneRx    115200 Capstone
2       38400  Discover      9600    Discover
3       9600   Discover      9600    Discover
4       9600   Discover      9600    Discover
5       9600   Discover      9600    Discover

RX protocol:
A Discover
B NONE
C Raw
D Monitor
E ActiveRaw
F Cvi
G Challenge
H 3rdParty
I Command
J Maui GPS
K Garmin GPS
L Garmin ADSB+ GPS
M Chargin
N Capstone
O CapstoneRx
P Icarus Alt
Q Shadin RMS
R Shadin G/S/Z
S Apollo Alt

```


Set Port 2 TX Baud Rate

- > 9 for 9600

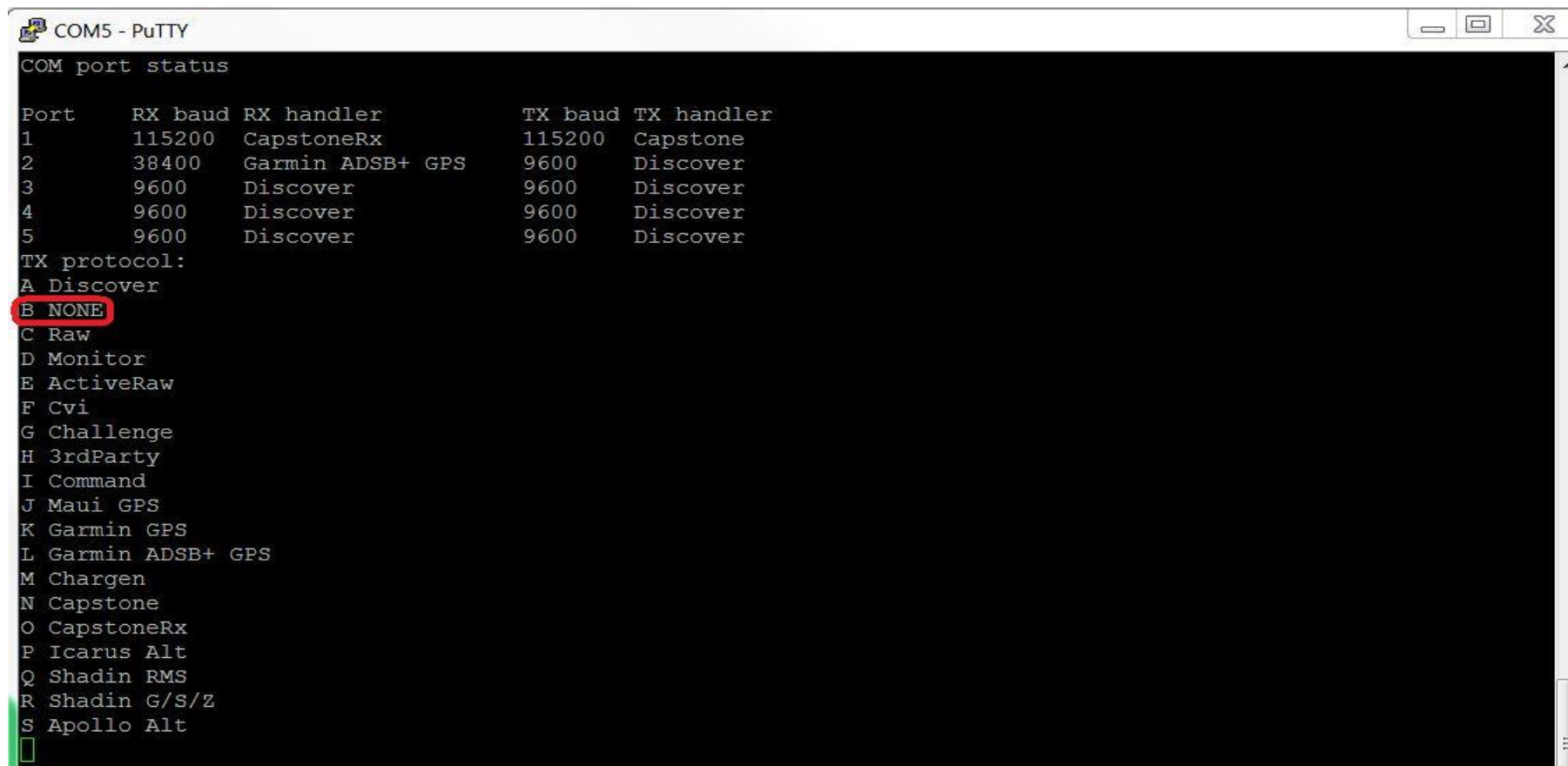


```
COM5 - PuTTY
COM port status

Port   RX baud RX handler      TX baud TX handler
1      115200 CapstoneRx       115200 Capstone
2      38400  Garmin ADSB+ GPS  9600    Discover
3      9600   Discover         9600    Discover
4      9600   Discover         9600    Discover
5      9600   Discover         9600    Discover
Set TX baud to [9]600, [3]8400, [5]7600, [1]15200, or [m]anual (Enter 9, 3, 5, 1, or m)
█
```

Set Port 2 TX Protocol

- > **B** for NONE



```
COM5 - PuTTY
COM port status

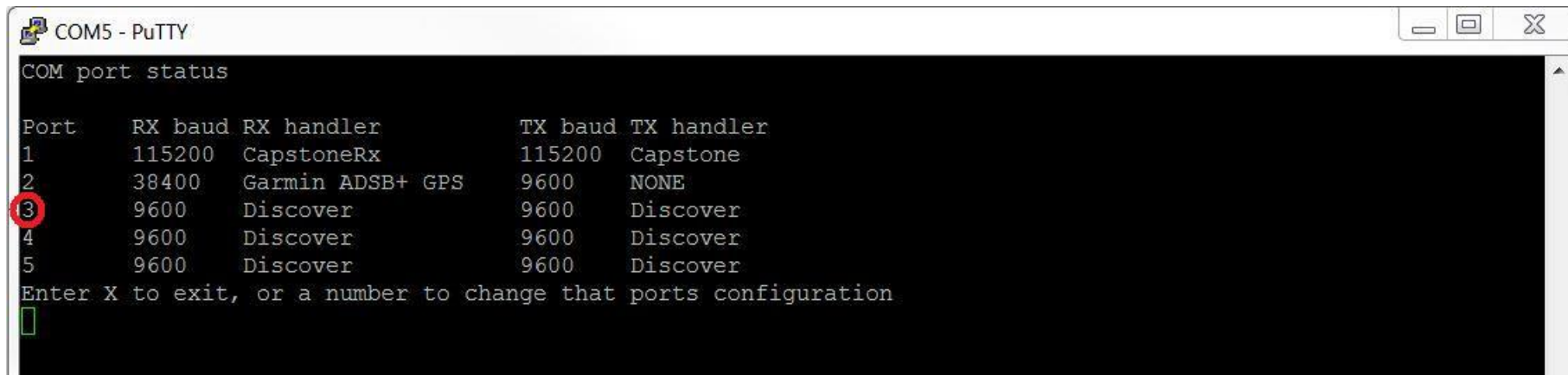
Port      RX baud RX handler      TX baud TX handler
1         115200 CapstoneRx      115200 Capstone
2         38400  Garmin ADSB+ GPS  9600    Discover
3         9600   Discover         9600    Discover
4         9600   Discover         9600    Discover
5         9600   Discover         9600    Discover

TX protocol:
A Discover
B NONE
C Raw
D Monitor
E ActiveRaw
F Cvi
G Challenge
H 3rdParty
I Command
J Maui GPS
K Garmin GPS
L Garmin ADSB+ GPS
M Chargin
N Capstone
O CapstoneRx
P Icarus Alt
Q Shadin RMS
R Shadin G/S/Z
S Apollo Alt
█
```

Comconfig [Port 3]

- Type the number of the port you wish to configure.....

> 3

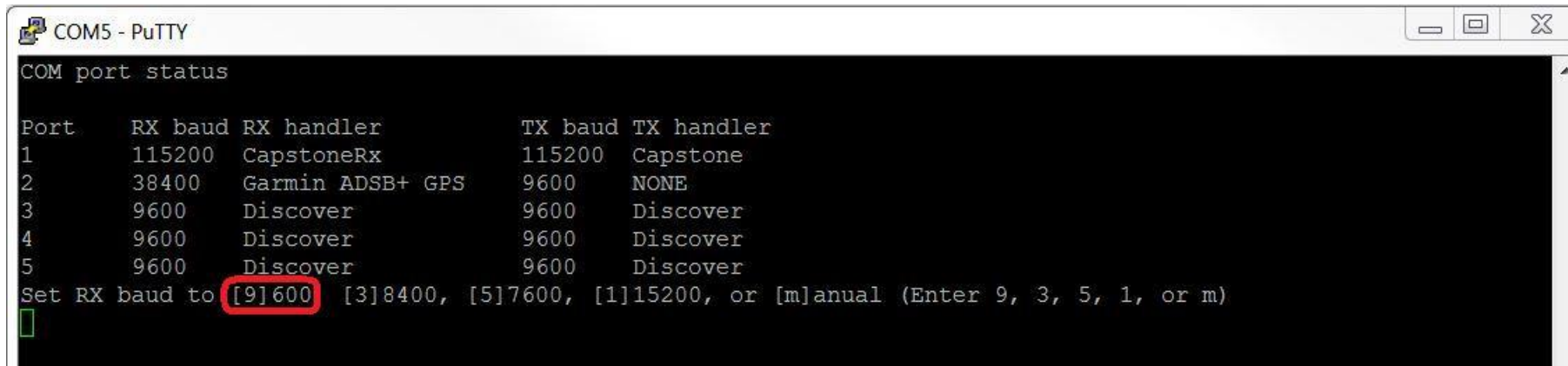


```
COM5 - PuTTY
COM port status

Port    RX baud RX handler      TX baud TX handler
1       115200 CapstoneRx      115200 Capstone
2       38400  Garmin ADSB+ GPS  9600    NONE
3       9600   Discover         9600    Discover
4       9600   Discover         9600    Discover
5       9600   Discover         9600    Discover
Enter X to exit, or a number to change that ports configuration
█
```

Set Port 3 RX Baud Rate

- > 9 for 9600

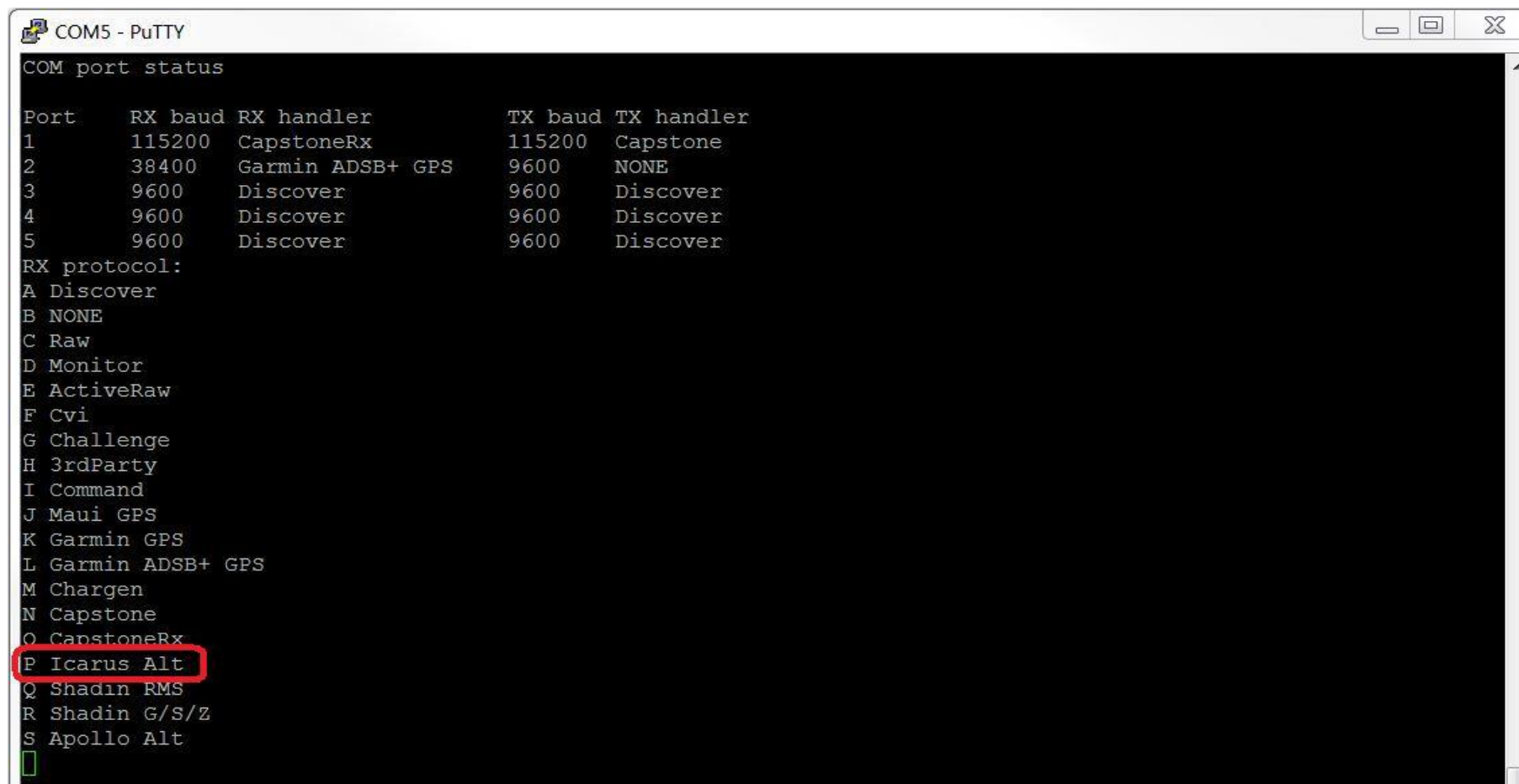


```
COM5 - PuTTY
COM port status

Port    RX baud RX handler      TX baud TX handler
1       115200 CapstoneRx       115200 Capstone
2       38400  Garmin ADSB+ GPS 9600    NONE
3       9600   Discover         9600    Discover
4       9600   Discover         9600    Discover
5       9600   Discover         9600    Discover
Set RX baud to [9]600 [3]8400, [5]7600, [1]15200, or [m]anual (Enter 9, 3, 5, 1, or m)
█
```

Set Port 3 RX Protocol

- > **P** for Icarus Alt



```
COM5 - PuTTY
COM port status

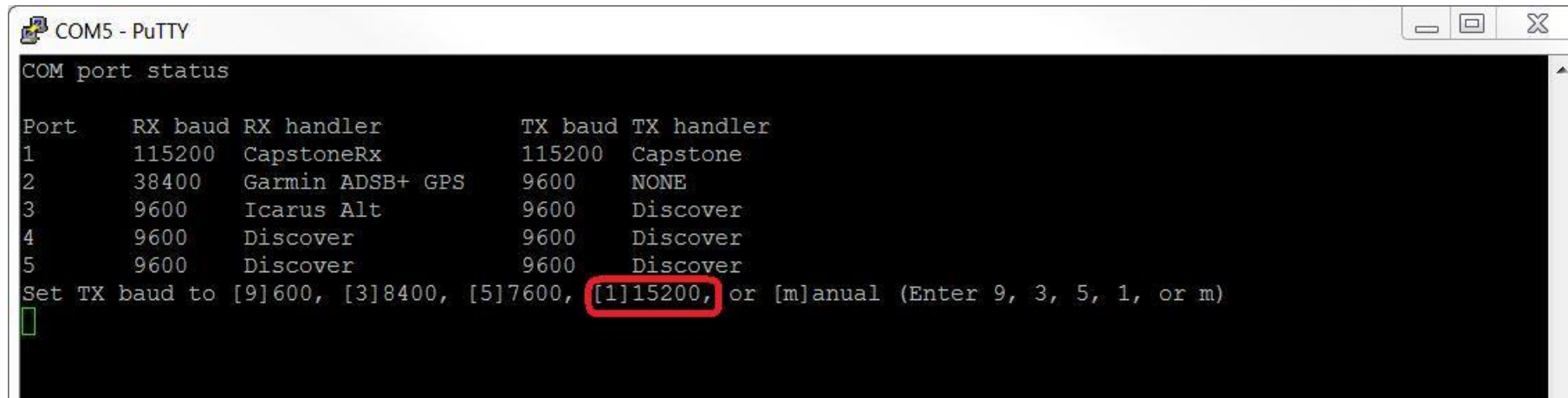
Port    RX baud RX handler    TX baud TX handler
1       115200 CapstoneRx    115200 Capstone
2       38400  Garmin ADSB+ GPS 9600    NONE
3       9600   Discover      9600    Discover
4       9600   Discover      9600    Discover
5       9600   Discover      9600    Discover

RX protocol:
A Discover
B NONE
C Raw
D Monitor
E ActiveRaw
F Cvi
G Challenge
H 3rdParty
I Command
J Maui GPS
K Garmin GPS
L Garmin ADSB+ GPS
M Chargin
N Capstone
O CapstoneRx
P Icarus Alt
Q Shadin RMS
R Shadin G/S/Z
S Apollo Alt

```


Set Port 3 TX Baud Rate

- > 1 for 115200

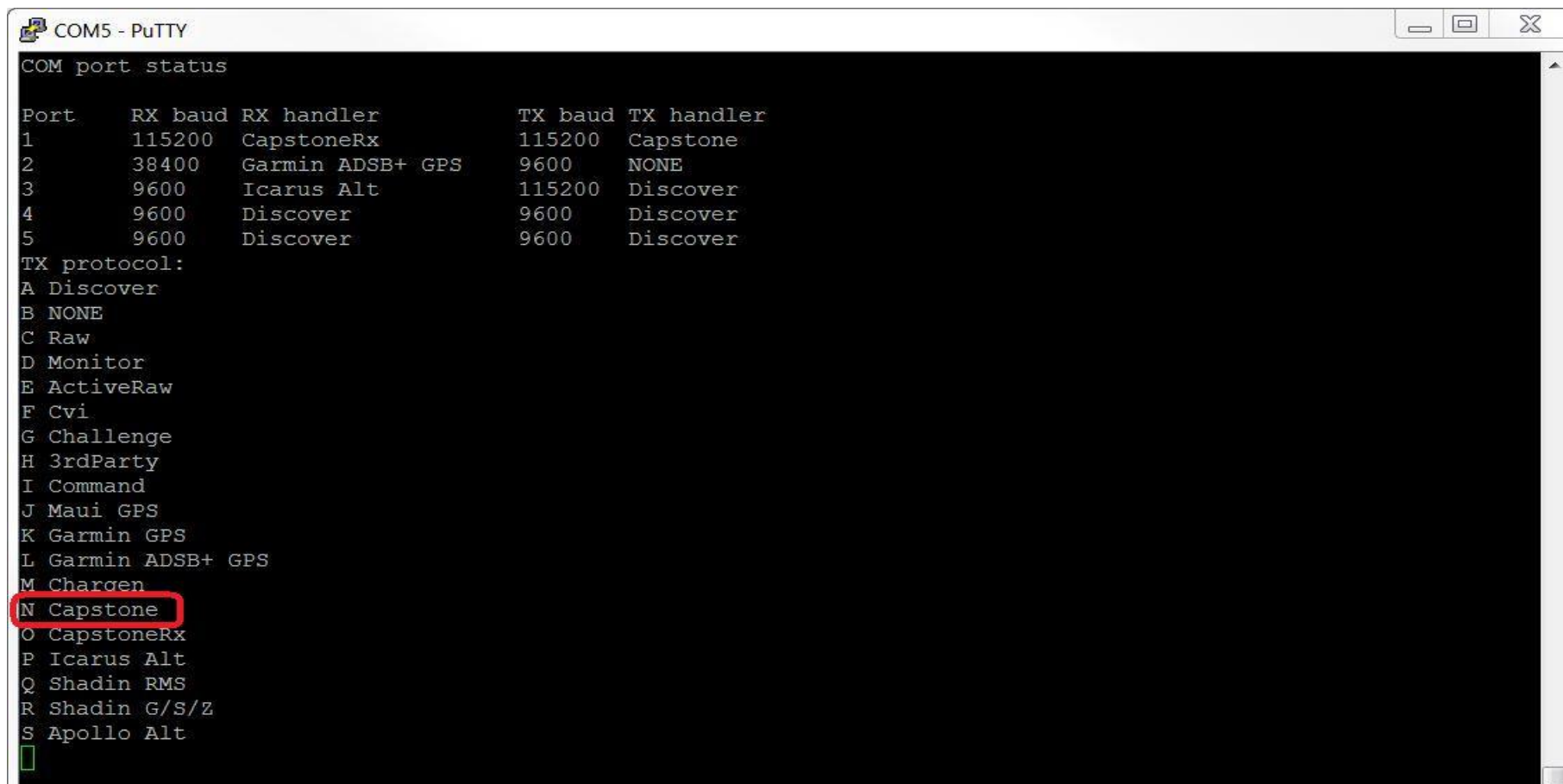


```
COM5 - PuTTY
COM port status

Port    RX baud  RX handler      TX baud  TX handler
1       115200  CapstoneRx      115200   Capstone
2       38400   Garmin ADSB+ GPS 9600     NONE
3       9600    Icarus Alt      9600     Discover
4       9600    Discover        9600     Discover
5       9600    Discover        9600     Discover
Set TX baud to [9]600, [3]8400, [5]7600, [1]15200, or [m]anual (Enter 9, 3, 5, 1, or m)
█
```

Set Port 3 TX Protocol

- > N for Capstone



```
COM5 - PuTTY
COM port status

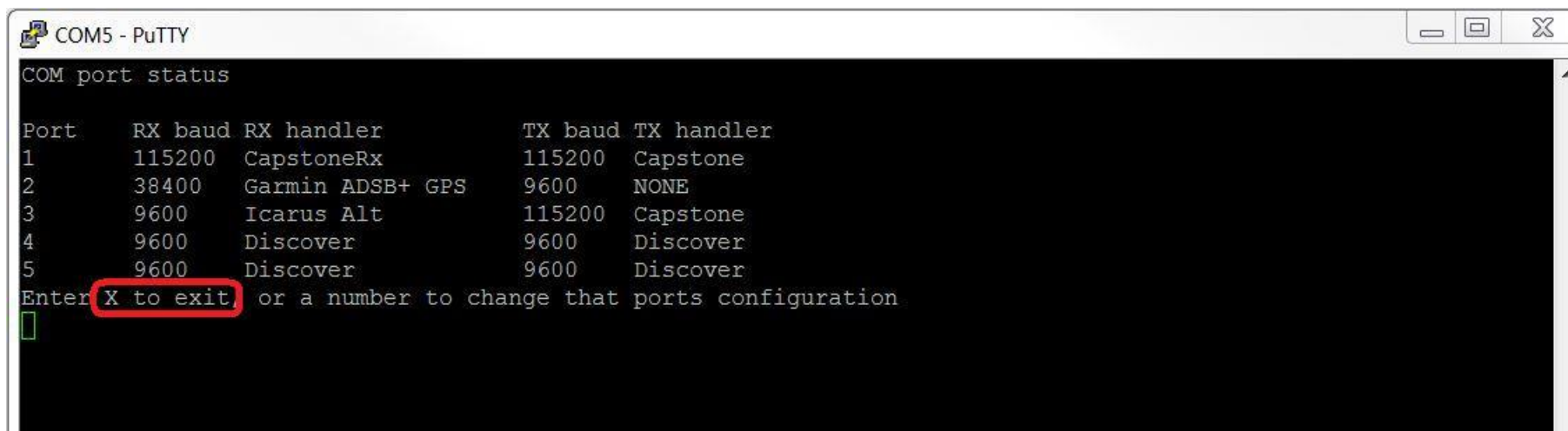
Port      RX baud RX handler      TX baud TX handler
1         115200 CapstoneRx      115200 Capstone
2         38400  Garmin ADSB+ GPS  9600    NONE
3         9600   Icarus Alt       115200 Discover
4         9600   Discover         9600    Discover
5         9600   Discover         9600    Discover

TX protocol:
A Discover
B NONE
C Raw
D Monitor
E ActiveRaw
F Cvi
G Challenge
H 3rdParty
I Command
J Maui GPS
K Garmin GPS
L Garmin ADSB+ GPS
M Chargon
N Capstone
O CapstoneRx
P Icarus Alt
Q Shadin RMS
R Shadin G/S/Z
S Apollo Alt

```

Comconfig Completed

- > X to Exit



```
COM5 - PuTTY
COM port status

Port    RX baud RX handler      TX baud TX handler
1       115200 CapstoneRx      115200 Capstone
2       38400  Garmin ADSB+ GPS  9600    NONE
3       9600   Icarus Alt       115200 Capstone
4       9600   Discover         9600    Discover
5       9600   Discover         9600    Discover
Enter X to exit, or a number to change that ports configuration
█
```

ADS-B TIS-B Traffic Processing

If you wish to use the Skytrax-100B as a TIS-B Traffic Receiver...
the “ADS-B” command must be set to ON

To Prevent the Skytrax-100B from displaying Own Ship as Target...
the Aircrafts ICAO Code must be entered.

ADS-B TIS-B Traffic

- To Enable TIS-B Traffic Processing type...
> **adsb on**
- To Verify adsb status type...
> **adsb**
- Processor will reply with...
adsb <on|off> - currenty ON



```
COM5 - PuTTY
>
>adsb on
>adsb
adsb <on|off> - currenty ON
>
>
```

Enter ICAO Code

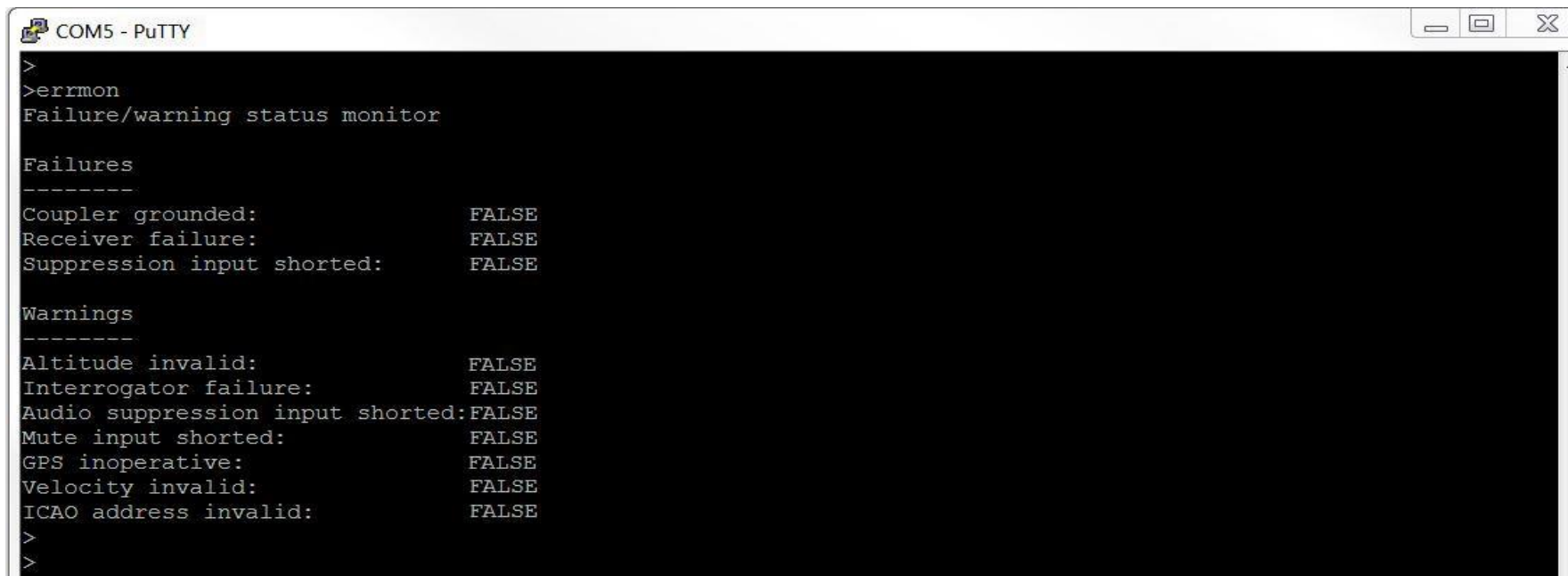
- Enter the 6 Digit Hex ICAO Code from the Aircraft Registration
>**icaoaddr A05FAB** [N123JM used as an example...]
- To Verify ICAO
>**icaoaddr**
ICAO address = A05FAB



```
>  
>icaoaddr a05fab  
>icaoaddr  
ICAO address = A05FAB  
>  
>
```

System Errors

- To view any Present Faults or Warning of the Skytrax 100B type...
>errmon
- The system will display Failure/Warning Status Monitor.
If any item is listed as **TRUE**, Please contact Avidyne Technical Support
techsupport@avidyne.com 888-723-7592



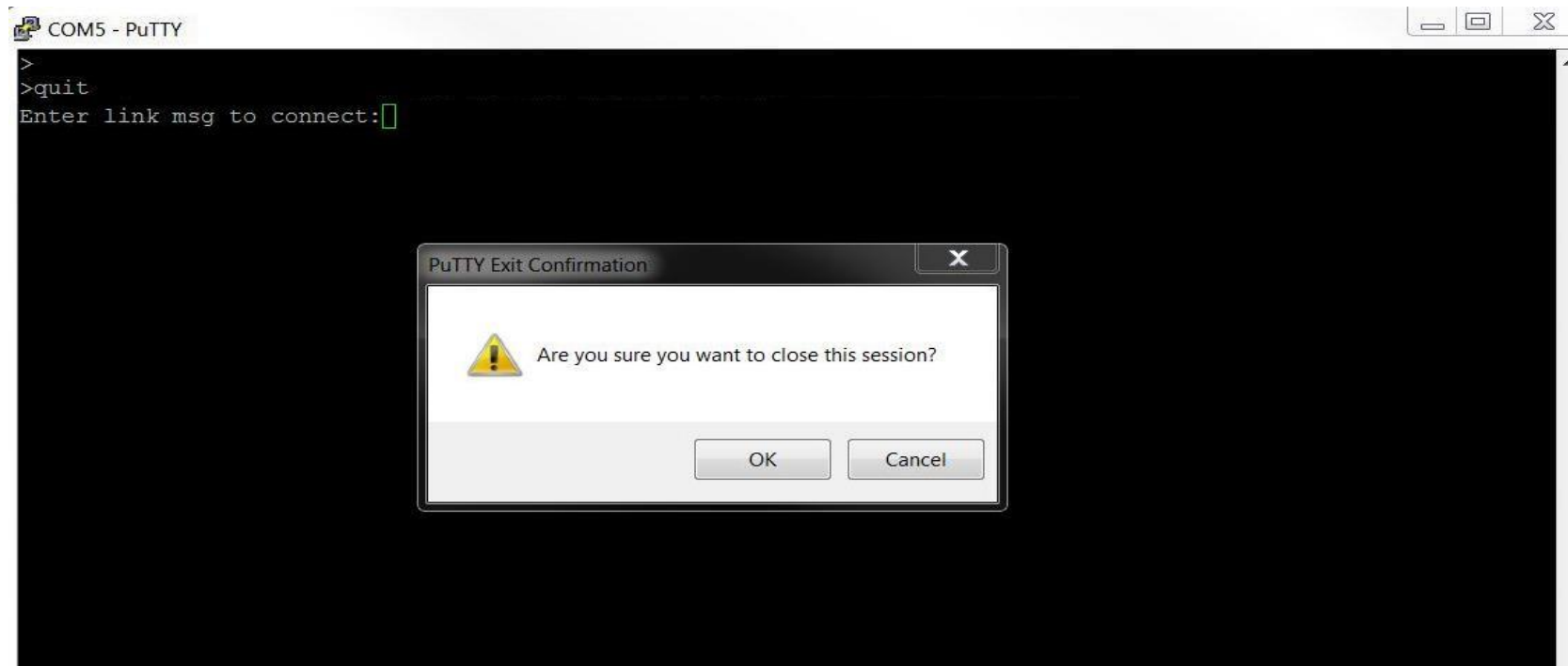
```
>
>errmon
Failure/warning status monitor

Failures
-----
Coupler grounded:          FALSE
Receiver failure:         FALSE
Suppression input shorted: FALSE

Warnings
-----
Altitude invalid:         FALSE
Interrogator failure:     FALSE
Audio suppression input shorted: FALSE
Mute input shorted:       FALSE
GPS inoperative:          FALSE
Velocity invalid:         FALSE
ICAO address invalid:     FALSE
>
>
```


Exit Configuration

- The concludes the Configuration of the Skytrax-100B. To exit Configuration Mode type....
>Quit
- Exit PuTTY and Cycle Power to the Skytrax-100B. Remain off for at least 60 Seconds for the new configuration changes to take effect.





Configuration and Monitoring Complete

- This concludes the discussion on Configuring and Monitoring the Skytrax-100B
- If you have any question please do not hesitate to contact techsupport@avidyne.com 888-723-7592



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For pilots who know the difference...

Thank You