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Article applies to – Digital Yacht AIT2000

ISSUE: Configuring an AIT2000 on a Mac using proAIS2

Before a Class B AIS Transponder can start to transmit your boat's position and vessel information, it must be configured with your MMSI number and other important information. Traditionally this type of configuration had to be done on a PC running Windows, but now with the AIT2000 and the proAIS2 configuration program this can be completed on a Mac.

The proAIS2 software for Macs can be downloaded from the Support section of the Digital Yacht website...

<http://www.digityacht.co.uk/files/proAIS2.dmg>

Once downloaded, double click the proAIS2.dmg (disk image) file to run the installer program. You should see the following window appear and you simply click and drag the proAIS2 icon on to the Applications folder icon.



This will install proAIS2 in the Applications folder and you can locate it using "Finder".

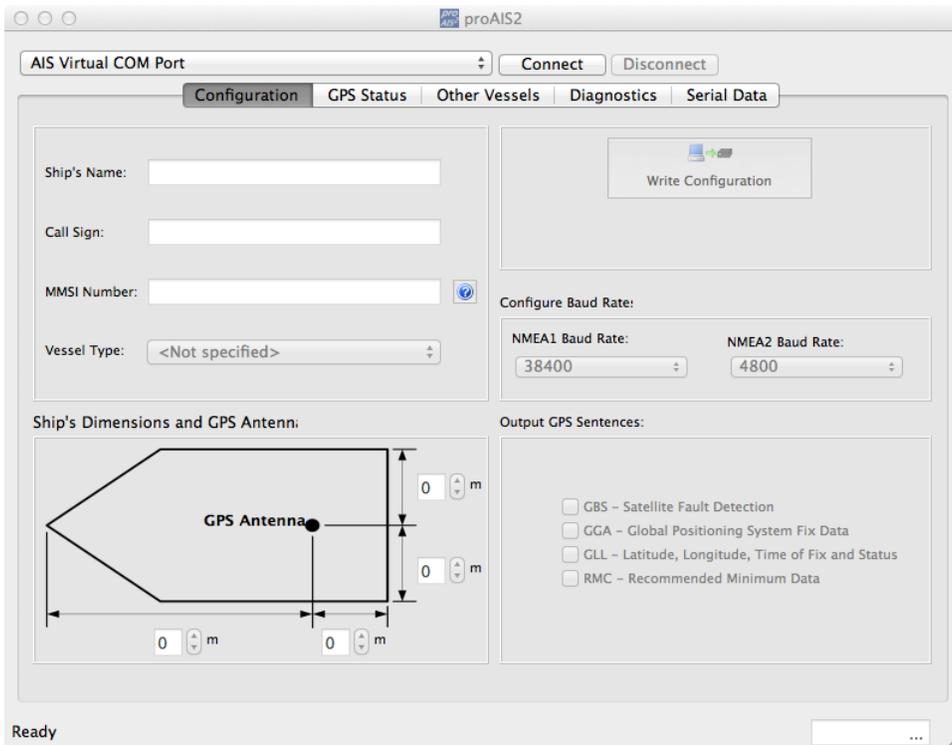
The next step is to plug the AIT2000 in to a spare USB socket on your Mac. The drivers for the AIT2000 are already included in the Mac OSX operating system so no fiddly driver installation is necessary, simply plug the AIT2000 in and the Mac will identify the AIT2000 and automatically select the correct drivers.

Configuring the AIT2000

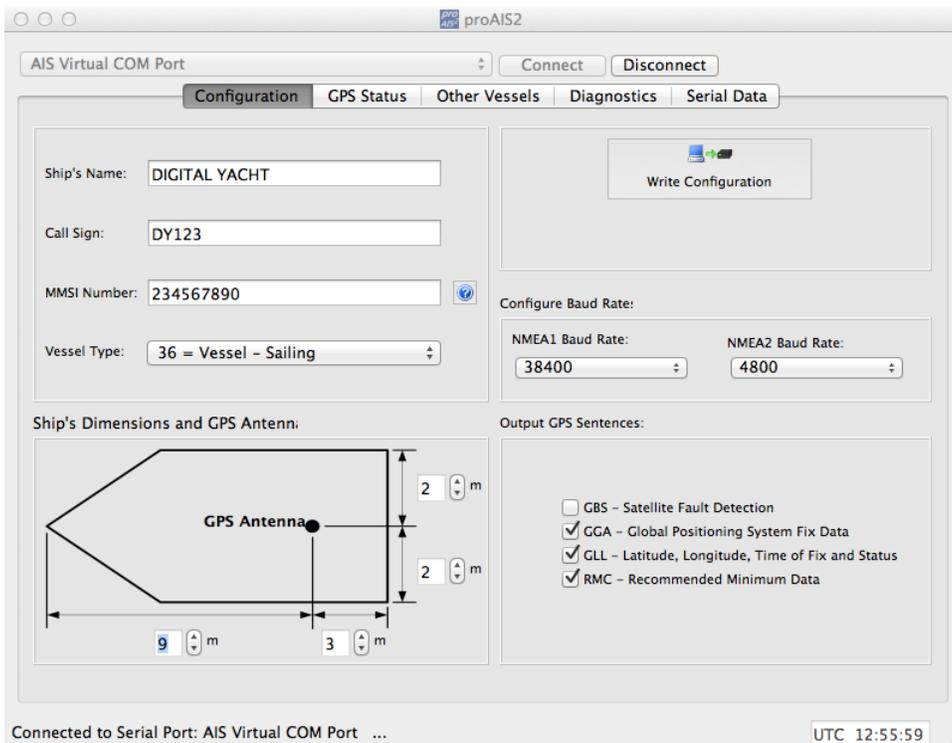
Even with no external 12v or 24v power connected, the AIT2000 can take enough power from the USB connection to power up its processor and memory. This is all that is required to configure the AIT2000 and although it will not operate as an AIS transponder without external power, this USB power up feature makes configuring the AIT2000 at home, in the office or anywhere else very easy indeed.

When the USB lead is plugged in to the Mac, the Green LED will illuminate briefly, followed by all four LEDs and then just the Red and Yellow LEDs will stay illuminated.

Now run proAIS2 by double clicking on the icon in "Finder" and you will see the window shown below. From the drop down menu select the **AIS Virtual COM Port** and click the "Connect" button.



proAIS2 will now try and communicate with the AIT2000 and the connection status is shown in the bottom left corner of the window. Once connected, you can enter your vessels details in the boxes, as shown below...



Once you have entered and double checked all of the boat's details, click the "Write Configuration" button and a warning page will be displayed which will remind you to check the MMSI number one last time, as once programmed this cannot be changed without returning it to a Digital Yacht service centre.

If you are 100% sure that the MMSI number is correct click the "Programme" button and the data you have entered will be uploaded in to the AIT2000.

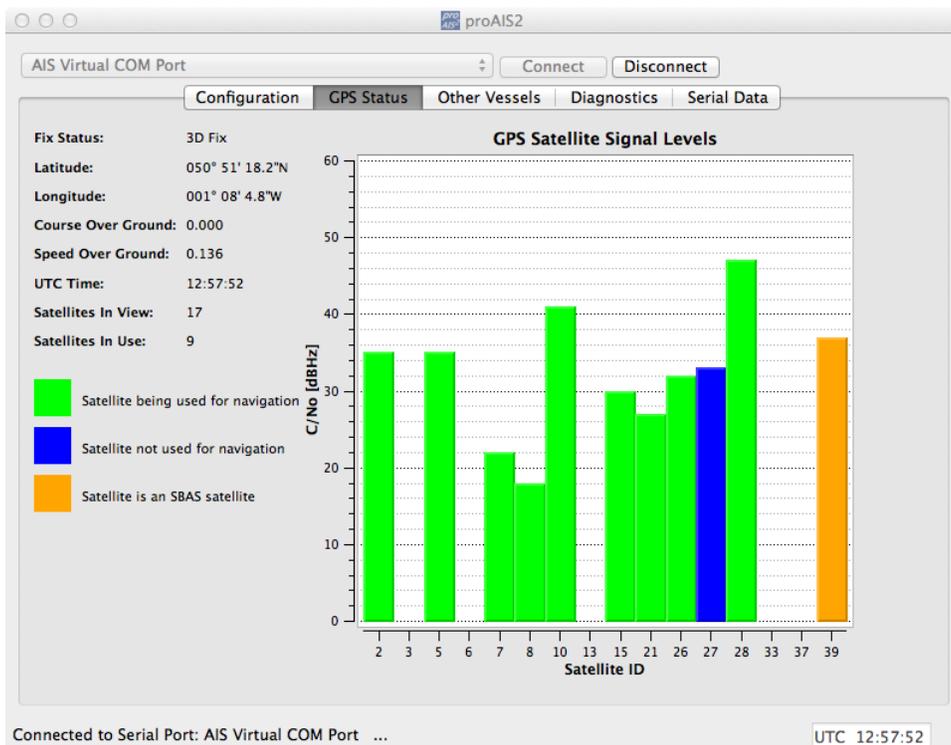
That completes the configuration of the AIT2000 and in most cases it is not necessary to run the proAIS2 again. That said, when installing the AIT2000 on the vessel, proAIS2 can be used as a useful test and diagnostics tool. The following section covers some of the basic diagnostic tools in proAIS2.

Using proAIS2 for Diagnostics

After you have installed the AIT2000 in the vessel, proAIS2 can be used to check the GPS and VHF antennas and also to make sure that AIS targets are being received and that the AIT2000 is transmitting correctly.

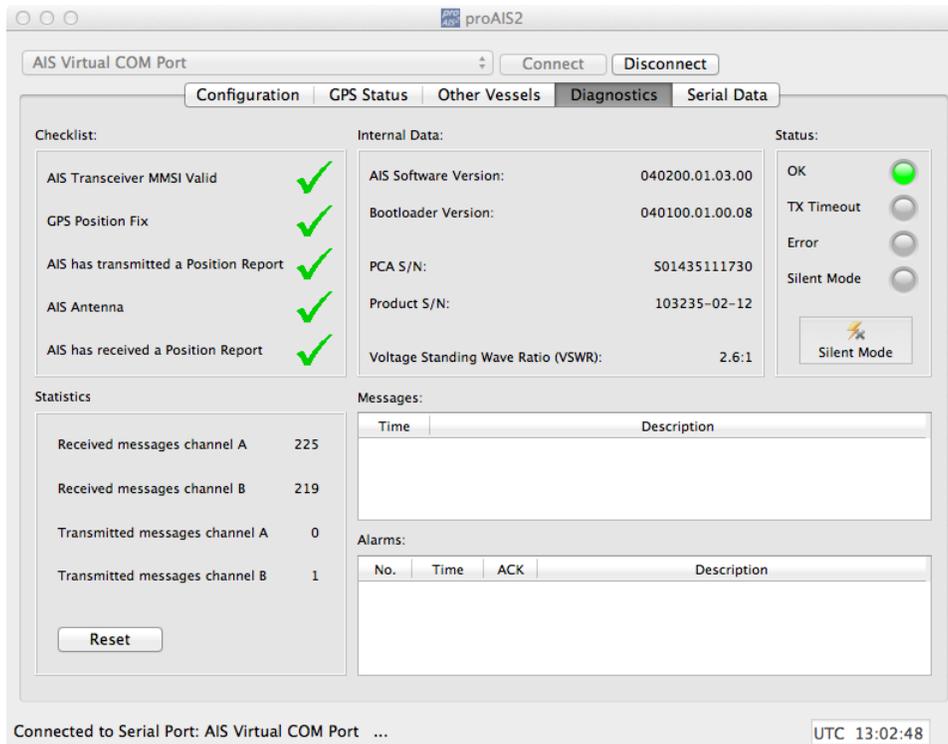
With the 12v or 24v supply to the AIT2000 turned on, you should see a solid Yellow LED illuminated. This indicates that the AIT2000 is programmed correctly and is waiting to get a GPS position fix and make its first AIS transmission.

Run proAIS2 and connect to the AIT2000 as you did in the configuration process. Click on the GPS tab and you should see a page similar to the one below...



If no GPS signal bars are shown or the values are very low <20 and are all blue rather than green, then you may have a GPS antenna problem. The first time that you power up the AIT2000 it may take slightly longer to get a first GPS fix as it must download the GPS almanac (timetable) to know where the GPS satellites are. However, if the AIT2000 has not received a first fix within 15-20minutes of being turned on, then a problem exists and you should contact Digital Yacht for further advice.

Assuming that the GPS is OK and you are getting a good fix, click on the Diagnostics tab and you will see a page similar to the one below....



When you first enter this screen, you may see a couple of red crosses alongside the “AIS has transmitted a Position Report” and “AIS Antenna” lines. This is normal when an AIT2000 is first turned on, as it can take up to 3 minutes before a Class B Transponder transmits its first position report if the vessel is stationary (Speed < 2 knots). Once the first transmission report is successfully made, you should see the five green ticks shown above and the Yellow LED will turn off and the Green LED will come on and stay on.

Please make sure there are no “Alarm” messages in either of the two windows and also check that the Voltage Standing Wave Ratio is less than 4 (lower the better) which indicates a good VHF antenna installation and that you are getting the best possible AIS transmission.

Please note that Class B transponders only transmit at 2 watts and even the best installation will only be seen about 7-8 miles away. Try and ask other vessels in the marina to check they can see you rather than use on-line AIS tracking services that have variable coverage and delays in adding new AIS transmissions to their database.

Assuming that everything looks OK on this Diagnostics page, the next step is to see what other AIS targets (vessels) you are receiving. Click on the “Other Vessels” tab and you should see a similar window to that shown at the top of the next page.

In this page you can see a list of all the AIS targets that the AIT2000 can receive in the local area. You can see the range and bearing of each target which will give you a good indication of how well your VHF antenna is picking up targets.

proAIS2

AIS Virtual COM Port [Connect] [Disconnect]

Configuration | GPS Status | **Other Vessels** | Diagnostics | Serial Data

MMSI	Name	Call Sign	Class	Speed (kn)	Course	Latitude	Longitude	Range (nm)	Bearing	
1	305135000		A	0.0	0.1	050° 48' 35....	001° 05' 28....	3.2	1	
2	249447000		A	0.3	319.7	050° 39' 3.8"N	001° 00' 34....	13.1	1	
3	235024149		A	0.0	259.8	050° 47' 41....	001° 06' 57....	3.7	1	
4	228183600	PONT AVEN	FNPN	A	0.6	298.4	050° 48' 38....	001° 05' 58....	3.0	1
5	235083825	SUNSAIL 4003	B	3.5	358.0	050° 48' 43....	001° 07' 24....	2.6	1	
6	235082006	AL RAHMANI	2DTU8	A	0.1	280.0	050° 48' 16....	001° 05' 57....	3.3	1
7	235077718	SCARBOROUGH	2DCC9							
8	235067098		MPSG2							
9	227273000	NORMANDIE	FNNO	A	0.0	248.0	050° 48' 39....	001° 05' 48....	3.0	1
10	235027275		B	0.0	128.2	050° 47' 56....	001° 06' 33....	3.5	1	
11	235061621	SD SOLENT RACER	2AON9	A	0.0	354.0	050° 48' 1.6"N	001° 06' 36....	3.4	1
12	235085277	SKYLARK	2EHW7	B	0.0	22.0	050° 47' 32....	001° 06' 57....	3.8	1
13	235069877	WIGHT RYDER II	2BWG7	A	12.9	340.9	050° 46' 58....	001° 06' 12....	4.5	1
14	636091006		A	0.0	31.1	050° 48' 32....	001° 05' 30....	3.2	1	
15	235003878	HMSTC REDCOAT	MPHU8	B	0.0	146.0	050° 47' 21....	001° 07' 10....	4.0	1
16	002320787	Base Station	BASE	0.0	0.0	050° 47' 58....	001° 06' 36....	3.5	1	
17	235083827	SUNSAIL 4005	2EBY3	B	0.2	348.0	050° 48' 32....	001° 07' 19....	2.8	1
18	235066825	SD SOLENT SPIRIT	2AON888	A	0.1	348.0	050° 48' 37....	001° 06' 9.6...	2.9	1
19	235065771	YACHT FIJA-MOR	MSMC9	B	0.2	324.8	050° 49' 14....	001° 08' 2.2...	2.1	1
20	235084947	EGS PIONEER	2EGS9	A	0.0	8.3	050° 47' 23....	001° 07' 0.4...	4.0	1
21	235073846	PORT OF SPAIN	2CLP9	A	0.1	25.0	050° 48' 23....	001° 06' 9.4...	3.2	1
22	234234000		A	0.0	81.3	050° 48' 39....	001° 05' 46....	3.0	1	
23	235031617	ST CECILIA	MFJT9	A	0.1	356.0	050° 47' 34....	001° 06' 27....	3.9	1
24	235000764		MAQD	B	1.8	235.8	050° 47' 29....	001° 06' 53....	3.9	1

Connected to Serial Port: AIS Virtual COM Port ... UTC 12:58:25

Please note that it may take up to 6 minutes for the names of all the vessels to be gradually populated in the list. This is related to the way AIS works and although the position of targets is regularly transmitted, anything from once every 3 seconds to once every 30 minutes (depending upon the type, speed and activity of a particular vessel) the “static” vessel data that ties the vessel name to the vessel MMSI number is only transmitted every 6 minutes.

Finally you can check the serial NMEA0183 data that is being output by the AIT2000 by clicking on the “Serial Data” tab.

proAIS2

AIS Virtual COM Port [Connect] [Disconnect]

Configuration | GPS Status | Other Vessels | Diagnostics | **Serial Data**

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!AIVDM,1,1,,A,13P:Qdh0000rreVM4;UR=UAF25`<,0*0F
!AIVDM,1,1,,A,B3P<H<@07oveWMA=TDrwwsUkP06,0*3C
!AIVDM,1,1,,A,33P:Qe800;wrrwBM4>Q81bkh0130,0*44
$GPRMC,130357.00,A,5051.30860,N,00108.08014,W,0.062,,100412,,,D*6E
!AIVDM,1,1,,B,H3P<H<A=Dq<4Tj3C33<00000000,2*77
!AIVDO,1,1,,B3Odp1P00Ovdq?WAUsqlwUoP06,0*55
!AIVDM,1,1,,B,H3P<H<DT71B=9>0j52Hq000h6400,0*16
$GPRMC,130358.00,A,5051.30874,N,00108.08013,W,0.068,,100412,,,D*69
!AIVDO,1,1,,B3Odp1P00Ovdq?WAUsulwUoP06,0*30
$GPRMC,130359.00,A,5051.30883,N,00108.08012,W,0.021,,100412,,,D*6C
!AIVDM,1,1,,B,13PH6i@P0SOrqQDM41k7e?wp0W3h,0*3F
!AIVDM,1,1,,A,33P:Ej00hEOrw3HM4di=V73j0118,0*7F
!AIVDO,1,1,,B3Odp1P00?vdq?WAU11wUoP06,0*63
$GPRMC,130400.00,A,5051.30893,N,00108.08013,W,0.080,,100412,,,D*6C
!AIVDM,2,1,9,B,53QbwT02?7aI`@QGB20i>0EH622222222221I8hN7853fN;iPEk1FH888,0*5F
!AIVDM,2,2,9,B,888888888880,2*2E
!AIVDO,1,1,,B3Odp1P00Ovdq?WAU51wP5oP06,0*52
!AIVDM,1,1,,A,13P9<@h61dwrrkPM40`=Dbgn0D1D,0*4C
!AIVDM,1,1,,B,13P9<@P01wr0:hM2=I8V6on00RE,0*0B
$GPRMC,130401.00,A,5051.30905,N,00108.08010,W,0.062,,100412,,,D*6C
!AIVDM,1,1,,A,D02=atH00000,0*30
!AIVDM,1,1,,B,13OHPT00000rv11M4h0S;BL205`<,0*43
!AIVDM,1,1,,A,13P9<@P01wrD@M44s79gv005`0,0*3F
!AIVDM,1,1,,A,13Q8:1@P1hOrqMFM4AKumwv40D1@,0*13
!AIVDO,1,1,,B3Odp1P00Ovdq?WAU91wPUoP06,0*3E
!AIVDM,1,1,,B,13P8q5@01F0rrr9DM4@92Nh04080r,0*72
$GPRMC,130402.00,A,5051.30917,N,00108.08007,W,0.043,,100412,,,D*69

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Enter Commands:

[Send] [Pause] [Log To File]

Connected to Serial Port: AIS Virtual COM Port ... UTC 13:04:02