

SeaViewer

Underwater Video Systems



SEA-TRAK DOCUMENTATION

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The *Sea-Trak*™

GPS Data Output - Video Screen Overlay

GENERAL HOOK-UP

The Sea-Trak™ operates on 12 VOLT DC current. Do not apply any other Voltage - do not use AC Current. Also, be sure to observe correct polarity - the center Pin is always Positive (+).

For NTSC units, a NTSC Composite Video source must be connected to the Video-IN jack. A NTSC Monitor, VCR, or Camcorder must be connected to the Video-OUT jack. For PAL units, a PAL Composite Video source must be connected to the Video-IN jack. A PAL Monitor, VCR, or Camcorder must be connected to the Video-OUT jack.

THERE WILL BE NO PICTURE ON THE MONITOR UNLESS THE VIDEO CONNECTORS ARE ATTACHED AS DESCRIBED ABOVE, AND THE Sea-Trak™ IS "TURNED ON".

When the Sea-Trak™ is properly powered and switched on, you should see the light burning on the front of the unit. If the light does not burn, check your power source with a tester - it must be 12 Volts DC, center-positive polarity, 80ma max. If the power is correct, contact SeaViewer.

BOOT-UP

When the Sea-Trak™ is first turned on, and receiving a proper Video signal, you will see a "Splash Screen" indicating SeaViewer Cameras, Inc., the Software Version Number, and the message "...searching for Satellites". If you do not see this message, you have either improper video or power connections. Check these as explained above before going further. Once you have the above message on the screen, the LAT/LON etc. will be displayed within about 5 seconds. If not, the Sea-Trak™ is not receiving compatible GPS data. If this occurs, see the next section.

PROPER GPS DATA INPUT

You must use the *Setup* menu of your GPS receiver in order for the unit to *send* data to the Sea-Trak™. Be sure that your GPS is capable of NMEA data output and that this function is enabled. If possible, select NMEA 0183 Version 2.1 GSA or later. Also, select 4800 as the *Baud* rate. If you have selections for the following, set them according to the table below :

4800	Baud rate
8	Data bits
N (None)	Parity
1	Stop bits
off	Checksum

If you do not find these selections, continue to the next paragraph.

Your GPS must send data output conforming to NMEA (National Marine Electronics Association) 0183 Standard - RMC (sentence structure) output at 4800 BAUD. Other sentence structures *may* be sent along with the above, but they will be ignored by the Sea-Trak™. If your manual does not contain this information, you must contact your manufacturer to confirm. This is the latest Marine standard for communication between Navigation equipment. SeaViewer is not responsible for assuring that all manufacturers comply. However, we may be able to point you to Internet resources that will help you determine compatibility.

Concerning the GPS-PC cable (DB-9), most major GPS manufacturers comply with standards of transmitting (Tx) data on PIN #2 (so, we Receive -Rx- on PIN #2), and ground (GND) on PIN #5. Be sure that your cable complies with this standard. Facing the back of the Sea-Trak™, PINS #2 and #5 are on the top row, 2nd PIN from left, and the last PIN on the right, respectively.

Either prior to purchase, or trouble-shooting afterwards, you may test your GPS and cable with an IBM™ compatible personal computer (PC) by following the procedure in the next section.

TESTING GPS RECEIVER AND CABLE OUTPUT WITH A PC

Many GPS receivers will not send output to another device unless they are actually getting a good *fix* from the satellites. This may make testing indoors difficult. In order to eliminate this problem, many GPS units have a *Simulate* mode. Use the *Setup* menu of your unit to enable *Simulate* mode.

Attach your GPS PC cable to your GPS receiver and a standard COM1 serial port on a PC. If you have navigational or other type of software that can *import* NMEA data, run this software and attempt to display the output of your GPS on the PC monitor. You can then verify the proper operation of your GPS and cable, and also determine the sentence structure used. You must be able to view the *raw* data in ASCII (text) format.

NOTE: If you do not have the software mentioned above, you may download a small program to run on your PC using DOS or Windows (any version) as the operating system. One such program which has been kindly placed for FREE in the Public Domain is *GPSNMEA Version 2.1*. We thank Dr.W.Pieper for writing and distributing this program. You will need PKunZip or other such archiving software to uncompress the program to your hard drive in a Directory of your choice. Complete program documentation and instructions are included in the *Zipped* file. Download this program by [clicking here - GPSNMEA](#).

View the ASCII data from your GPS and look for a sentence which begins with: *\$GPRMC*. This is the sentence we need. The entire sentence should look similar in form to the following, except of course your numbers will be different, but all the fields separated by commas should be there :

\$GPRMC,235959,A,2749.97,N,08240.25,W,000.5,180.0,122500,003.9,W*68

For the very inquisitive type, here is a description of the fields in the sentence above :

235959	Time of fix 23:59:59 UTC
A	Navigation receiver warning A = OK, V = warning
2749.97,N	Latitude 27 deg. 49.97 min North
08240.25,W	Longitude 82 deg. 40.25 min West
000.5	Speed over ground, Knots
180.0	Course Made Good, True
122500	Date of fix 25 December 2000
003.9,W	Magnetic variation 03.9 deg West
*68	Checksum value (optional)

Reception of a sentence similar to the one above, beginning with *\$GPRMC*, indicates that your GPS and cable are compatible with the Sea-Trak™, and are operating properly. If the Sea-Trak™ does not display the GPS data on your video screen after successfully completing the above procedures, please contact SeaViewer Cameras, Inc.

OTHER INFO

If you have any questions, contact your local Marine Electronics Specialist, GPS supplier or SeaViewer at 813-242-6160.

WARRANTY: The Sea-Trak™ is Warranted against factory defects for one year from date of Purchase under normal use. Special steps have been taken to aid the Sea-Trak™ in being resistant to deterioration from humidity. However, care should be taken to prevent the Sea-Trak™ from direct exposure to spray from salt or fresh water. Damage due to such direct exposure is not covered under Warranty.

There are no user-servicable parts inside the Sea-Trak™. Breaking the factory seal shall void Warranty.

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