SYSTEM CONFIGURATION 21 May 2008

Model SBE 16plus	**S/N 16P50181-6047**
Instrument Type	**SBE 16plus SeaCaT**
Firmware Version	**2.0c**
Communications	**9600 baud, 8 data bits, no parity, one stop bit**
Memory	**8192K**
Housing	**7000 meter (3AL-2.5V Titanium)**
0 Conductivity Raw Frequency	**2637 Hz**
Operating Mode	**Moored**
Pressure Sensor	**Digiquartz with Temp-Comp: 6000 psia, S/N 105120**
Computer communications (Data I/O) connector	**located on the P/N 17797 Y-Cable**
Number of Voltages Sampled:	**1**
Serial RS-232C Sensor	**None**

Data Format:

Count	**Temperature**
Frequency	**Conductivity**
Frequency	**Pressure, Digiquartz with TC**
Stored Voltage 0 (External Voltage 0)	**User Polynomial**

Pump (SBE 5T)	**054951**
Turbidity (WETLABS ECO-NTURTD)	**NTURTD-115**

IMPORTANT SOFTWARE & HARDWARE CONFIGURATION INFORMATION

Sea-Bird supplies two versions of our software package for communication, real-time data acquisition, and data analysis and display:

- SEASOFT-Win32 - Windows software for PC running Win 95/98/NT/2000/XP
- SEASOFT-DOS - DOS software for IBM-PC/AT/386/486 or compatible computer with a hard drive

Detailed information on the use of the **Windows** software follows:

SEASOFT-Win32

SEASOFT-Win32 software was supplied on a CD-ROM with your CTD. This software package is designed to run on a PC running Win 95/98/NT/2000/XP. The CD-ROM also contains software manuals that describe the appropriate applications for the various programs, the procedure for installing the software, and instructions on using the programs. There are three primary programs used with the CTD for setup, data collection and retrieval, data display, and data processing:

- SEATERM - terminal program for setup of the CTD and uploading of data from the CTD memory (**Note**: If using the CTD with the 90208 Auto Fire Module or SBE 17*plus* V2 SEARAM, use SeatermAF instead of SEATERM)
- SEASAVE - real-time data acquisition program
- SBE Data Processing - data processing program

Instructions for using the software are found in their Help files.

To communicate with the CTD to set it up or to upload data from the CTD memory to the computer hard drive, **SEATERM** must have information about the CTD hardware configuration (communication parameters, internal firmware, etc.) and about the computer. To communicate with the CTD, double click on Seaterm.exe:

1. In the Configure menu, select the CTD. The Configuration Options dialog box appears.
   A. On the COM Settings tab, select the firmware version (if applicable), baud rate, data bits, and parity to match the CTD's configuration sheet. If necessary, change the com port to match the computer you are using.
   B. On the Upload Settings tab, enter upload type (all as a single file, etc.) as desired.
   For the SBE 17 and 25 only: enter the serial number for the SBE 3 (temperature) and SBE 4 (conductivity) modular sensors, exactly as they appear in the configuration (.con) file.
   C. On the Header Information tab, change the settings as desired.
   Click OK when done. SEATERM saves the settings in a SEATERM.ini file.
2. On the Toolbar, click Connect to communicate with the CTD.
3. To set up the CTD prior to deployment:
   On the Toolbar, click Status. SEATERM sends the Status command and displays the response. Verify that the CTD setup matches your desired deployment. If not, send commands to modify the setup.
4. To upload data from the CTD:
   On the Toolbar, click Upload to upload data from the CTD memory to the computer.

Sea-Bird CTDs store and/or transmit data from their primary and auxiliary sensors in the form of binary or hexadecimal number equivalents of the sensors' frequency or voltage outputs. This is referred to as the *raw* data. The calculations required to convert from *raw* data to *engineering* units of the measured parameters (temperature, conductivity, pressure, dissolved oxygen, pH, etc.) are performed using the software, either in real time, or after the data has been stored in a file. SEASAVE creates the file in real time. As noted above, SEATERM uploads the recorded data and creates the file on the computer hard drive.

To successfully store data to a file on the computer and subsequently convert it to engineering units, the software must know the CTD type, CTD configuration, and calibration coefficients for the sensors installed on the CTD. This information is unique to each CTD, and is contained in a *configuration* file. The configuration file, which has a .con extension, was written onto a floppy disk and the CD-ROM shipped with the CTD. The .con file for a given CTD is named with the last four digits of the serial number for that CTD (e.g., 1234.con). The configuration file is created or modified (e.g., changing coefficients after recalibration, or adding another sensor) by using the Configure menu in **SEASAVE** or
SBE Data Processing. The configuration file is used by SEASAVE to convert raw data to engineering units when it acquires, stores, and displays real-time data. The configuration file is also used by some modules in SBE Data Processing (Data Conversion and Derive) that convert raw data to engineering units during data processing.

The instrument type and instrument configuration settings of the .con file and the required setup for the SEATERM.ini file for the CTD *as delivered* are documented below. The calibration coefficients for the CTD's sensors are contained in the calibration coefficient section of the CTD manual.

NOTE:

SEATERM will not upload data correctly without a properly configured SEATERM.ini file. SEASAVE and SBE Data Processing will not interpret the data correctly without the correct .con file.

SEASOFT CONFIGURATION:

The correct instrument type for your instrument is SBE 16plus SEACAT Profiler. The correct settings for the configuration of your instrument as delivered are documented below: