

SBE 17*plus* V2 SEARAM Reference Sheet

(see SBE 17*plus* V2 SEARAM User's Manual for complete details)

System Setup

1. Double click on SeatermAF icon.
2. Once main screen appears, in Configure menu select SBE 17*plus* V2. Input:
 - A. Communications and Upload Settings tab
 - Serial Port: COM1 through COM10 are available.
 - Baud Rate: 9600 (or other if applicable).
 - Battery Type: NiCad (standard for SEARAM) or Alkaline.
 - Upload data type: define data upload for when you use Upload button on Toolbar.
 - Header options: define header information included with uploaded data.
 - SBE 3/4 serial number: temperature and conductivity sensor serial numbers (from SBE 9*plus*) needed for post-processing data.
 - B. SBE 17 Auto Fire tab
 - 9+ Configuration File: .con file provided by Sea-Bird contains pressure coefficients.
 - Bottle Closure Parameters: define whether to close a bottle at bottom of downcast, and define when bottom is reached and upcast begins.
 - C. Bottle Positions and Closure Parameters tab
 - Define total number of bottles to close, and bottle positions and closure pressures.
3. In Configure menu, select Header Form to customize header if desired.
4. Click Connect on Toolbar. SeatermAF should return an **S>** prompt.
5. Set Date and Time — see Command Instructions and List on other side.
6. Set up other parameters if desired — see Command Instructions and List on other side.
7. Program and Arm Auto Fire
 - A. Click Program on Toolbar to send previously input auto fire parameters to SEARAM.
 - B. Click Arm on Toolbar to arm auto fire, which enables SEARAM to command Carousel to take samples.

Deployment

1. Remove I/O cable from 4-pin connector on SEARAM. Replace with dummy plug and locking sleeve.
2. *Aluminum housing*: Verify that anodes have not eroded away.
3. Verify that hardware and external fittings are secure. Verify that cable connections from SEARAM to SBE 9*plus* CTD underwater unit and SBE 32 Carousel water sampler are secure.
4. Push in SEARAM's switch plunger to turn on power to system. Deploy.

Data Uploading

1. If not done already, command SEARAM to stop logging by pulling out switch plunger.
2. Remove dummy plug and locking sleeve from 4-pin connector on SEARAM. Replace with I/O cable.
3. Double click on SeatermAF icon.
4. Click Connect on Toolbar. SeatermAF should return an **S>** prompt.
5. Click Upload on Toolbar to upload stored data. Resulting dialog boxes are dependent on Upload and Header settings selected in *System Setup* above.
6. Ensure all data has been uploaded by processing file and reviewing data in SEASOFT.

Command Instructions and List

- Input commands in upper or lower case letters and register commands by pressing Enter key.
- SEARAM sends ‘? CMD’ if an invalid command is entered.
- If SEARAM does not return an S> prompt after executing a command, press Enter key to get S> prompt.
- If a new command is not received within 2 minutes, SEARAM returns to quiescent (sleep) mode to prevent battery exhaustion.
- **If in quiescent (sleep) mode, re-establish communications by pressing Connect on Toolbar or Enter key to get S> prompt.**
- Commands marked with * (* is not part of command) alter SEARAM’s memory and require verification before executing.
- Use Toolbar’s Upload button or Data menu’s Upload Data to upload data that will be post-processed by SEASOFT.
- If SEARAM is transmitting data and you want to stop it, type ^C or press Esc key. Press Enter key to get S> prompt.
- Braces [] indicate optional command parameters. Items in braces need not be entered.

Shown below are the commands used most commonly in the field. See the Manual for a complete list and detailed descriptions.

CATEGORY	COMMAND	DESCRIPTION
Status	DS	Display status.
Setup	MMDDYY=mmddy	Set real-time clock month, day, year. Follow with HHMMSS= or it will not set date.
	DDMMYY=ddmmy	Set real-time clock day, month, year. Follow with HHMMSS= or it will not set date.
	HHMMSS=hmmss	Set real-time clock hour, minute, second.
	BAUD=x	x= baud rate for general communication and uploading (300, 600, 1200, 2400, 4800, 9600, 19200, or 38400)
	Bx	Battery is nickel-cadmium (x=N) or alkaline (x=A).
	ERASE MEMORY *	Erase memory, which destroys all data in SEARAM.
	AVE=n	Set number of scans to average in SEARAM to n (1-96).
	SF=n	Suppress n frequency channels. n = 0 (dual redundant sensors), 1 (single redundant sensor), or 2 (no redundant sensors)
	SV=n	Suppress n voltage channels (0, 2, 4, 6, or 8).
	AC0=n	Advance primary conductivity n scans (n=0-3).
	AC1=n	Advance secondary conductivity n scans (n = 0-3).
Logging	QS	Quit session, place SEARAM in quiescent (sleep) mode. Main power is turned off.
	SAMPLENUM=0 * or CASTNUM=0 *	Reset data pointers and cast number after existing data has been uploaded.
	Fn	Turn SBE 9 power on (n=O) or off (n=F), instead of using SEARAM’s plunger.
Auto Fire: General Setup	CP	Display bottle closure parameters.
	NB=n	n= total number of bottles to be closed during deployment (default 24)
	BC n,m	Perform closure n at pressure m (db). Repeat NB times.
	BS n,m	Bottle closure n closes bottle number m. Repeat NB times.
	#xxx	Relay character string to carousel. xxx can be any command recognized by carousel.
Auto Fire: Bottle Bottom Closure and Upcast Logic Setup	BBx	Enable (x=Y) or disable (x=N) bottom bottle closure.
	BBP=n	n= bottom bottle pressure window (db).
	BBT=n	n= bottom bottle time (minutes).
	BUP=n	n= pressure (db) to enable upcast.
	BUD=n	n= pressure decrease (db) from maximum to signal upcast.
Auto Fire: Pressure Coefficients	PC1=n, PC2=n, PC3=n, PD=n, PT1=n, PT2=n, PT3=n, PT4=n, PADM=n, PADB=n	n= pressure coefficient (C1, C2, C3, D, T1, T2, T3, T4, Adm, Adb) from Calibration Certificate.
Auto Fire: Carousel On/Off	Cn	Turn carousel power on (n=O) or off (n=F).
Auto Fire: Arm/Disarm	ARM or DISARM	Enable (ARM) or disable (DISARM) auto fire.
Data Upload Pull out plunger first.	DC [n]	Display raw data in HEX from cast n.
	DD [n1,n2]	Display raw data in HEX from scan n1 through n2.
	DH	Display headers from all casts.
Diagnostics	BV	Display main battery voltage.
	BI	Display main battery current.
	VR	Continuously display voltages – main battery voltage and SEARAM operating current in amps. SEARAM switches on power to CTD and carousel, so operating current is total current drawn by SEARAM, CTD, and carousel. Press Esc key to stop test.
	TESTEE	Test EEPROM.
	FLASH INITIALIZE *	Perform 20 minute memory test, which destroys all data in SEARAM.
	FLASH MAP	Display results of FLASH INITIALIZE. Press Esc key to abort at any time.