

# SBE 49 FastCAT Profiler Reference Sheet

(see SBE 49 User's Manual for complete details)

## Sampling Modes

- **Autonomous** – sampling at 16 Hz, averaging NAVG samples and transmitting averaged data. FastCAT runs continuously.
- **Polled** – sampling in response to command.

## Communication Setup Parameters

1. Double click on SeaTerm.exe.
2. Once main screen appears, in Configure menu select SBE 49. Click on COM Settings tab in dialog box. Input:
  - Serial Port: COM1 through COM10 are available
  - Baud Rate: 9600 (or other if applicable)
  - Data Bits: 8
  - Parity: None
  - Mode: RS-232 (Full Duplex)

## Deployment

1. Program FastCAT for intended deployment (see other side of this sheet for *Command List*):
  - Establish setup and sampling parameters.
2. Install I/O cable connector and locking sleeve. Connect other end of cable to computer/controller and to power supply.
3. Verify hardware and external fittings are secure.
4. Remove caps from end of T-C Duct and pump exhaust tee.
5. Apply power. If **AUTORUN=Y**, FastCAT will start sampling automatically.
  - If **AUTORUN=N**, send **START**.

## Command Instructions

- Input commands in upper or lower case letters and register commands by pressing Enter key.
- FastCAT sends ?CMD if invalid command is entered.
- If system does not return S> prompt after executing a command, press Enter key to get S> prompt.
- Establish communications by clicking Connect on Toolbar or pressing Enter key to get S> prompt.

See *Command List* on other side of this sheet

## Command List

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

CATEGORY	COMMAND	DESCRIPTION
Status	DS	Display status and setup parameters.
Setup	BAUD=x	x= baud rate (1200, 2400, 4800, 9600, 19200, 38400). Default 9600.
	OUTPUTFORMAT=x	x=0: Output raw data in Hex. x=1: output converted data in Hex. x=2: Output raw data in decimal. x=3: Output converted data in decimal.
	OUTPUTSAL=x	x=Y: Output salinity (psu). x=N: Do not.
	OUTPUTSV=x	x=Y: Output sound velocity (m/sec). x=N: Do not.
	SETDEFAULTS	Reset following to default values: OUTPUTFORMAT=3, OUTPUTSAL=Y, OUTPUTSV=Y, NAVG=1, MINCONDREQ=3000, PUMPDELAY=30, PROCESSREALTIME=Y, TADVANCE=0.0625, ALPHA=0.03, TAU=7.0, AUTORUN=N.
Autonomous Sampling	NAVG=x	x= number of samples to average. FastCAT samples at 16 Hz and averages NAVG samples.
	MINCONDREQ=x	x= minimum conductivity frequency (Hz) to enable pump turn-on.
	PUMPDELAY=x	x= time (seconds) to wait after minimum conductivity frequency reached before turning pump on.
	PROCESSREALTIME=x	x=Y: Apply alignment, filtering, and conductivity cell thermal mass corrections to data. Only applies if OUTPUTFORMAT=1 or 3. x=N: Do not apply corrections to data.
	TADVANCE=x	x= Time to advance temperature data relative to conductivity and pressure data. Range 0 to 0.125 seconds; default 0.0625 seconds. Only applies if PROCESSREALTIME=Y and OUTPUTFORMAT=1 or 3.
	ALPHA=x	x= Conductivity cell thermal mass alpha correction. Range 0.02 to 0.05; default 0.03. Only applies if PROCESSREALTIME=Y and OUTPUTFORMAT=1 or 3.
	TAU=x	x= Conductivity cell thermal mass tau correction. Range 5 to 10; default 7.0. Only applies if PROCESSREALTIME=Y and OUTPUTFORMAT=1 or 3.
	AUTORUN=x	x=N: Wait for command when power applied. Default. x=Y: Start autonomous sampling when power applied.
	START	Start autonomous sampling now.
	STOP	Stop autonomous sampling. Press Enter key to get S> prompt before entering command.
Polled Sampling	PUMPON	Turn pump on.
	PUMPOFF	Turn pump off.
	TS	Take <b>one</b> sample and transmit data.
Testing Measure 100 times. Press Esc key or Stop on Toolbar to stop test.	TT	Measure temperature and transmit converted data.
	TC	Measure conductivity and transmit converted data.
	TP	Measure pressure and transmit converted data.
	TTR	Measure temperature and transmit raw data.
	TCR	Measure conductivity and transmit raw data.
	TPR	Measure pressure and transmit raw data.
Coefficients	DCAL	Display calibration coefficients. Use individual commands to modify particular coefficient or date.
	TCALDATE=S	S=Temperature calibration date.
	TAO=F	F=Temperature A0.
	TA1=F	F=Temperature A1.
	TA2=F	F=Temperature A2.
	TA3=F	F=Temperature A3.
	TOFFSET=F	F=Temperature offset correction.
	CCALDATE=S	S=Conductivity calibration date.
	CG=F	F=Conductivity G.
	CH=F	F=Conductivity H.
	CI=F	F=Conductivity I.
	CJ=F	F=Conductivity J.
	CPCOR=F	F=Conductivity pcor.
	CTCOR=F	F=Conductivity tcor.
	CSLOPE=F	F=Conductivity slope correction.
	PCALDATE=S	S=Pressure calibration date.
	PRANGE=F	F=Pressure sensor full scale range (psi).
	POFFSET=F	F=Pressure offset correction.
	PA0=F	F=Strain-gauge pressure A0.
	PA1=F	F=Strain-gauge pressure A1.
	PA2=F	F=Strain-gauge pressure A2.
	PTEMPA0=F	F=Strain-gauge pressure temperature A0.
	PTEMPA1=F	F=Strain-gauge pressure temperature A1.
	PTEMPA2=F	F=Strain-gauge pressure temperature A2.
	PTCA0=F	F=Strain-gauge pressure temperature compensation ptca0.
	PTCA1=F	F=Strain-gauge pressure temperature compensation ptca1.
	PTCA2=F	F=Strain-gauge pressure temperature compensation ptca2.
PTCB0=F	F=Strain-gauge pressure temperature compensation ptcb0.	
PTCB1=F	F=Strain-gauge pressure temperature compensation ptcb1.	
PTCB2=F	F=Strain-gauge pressure temperature compensation ptcb2.	