SBE 37-SM (RS-232) MicroCAT Reference Sheet
(see SBE 37-SM MicroCAT User's Manual for complete details)

Sampling Modes

- **Autonomous sampling** – At pre-programmed intervals, MicroCAT wakes up, samples, stores data in FLASH memory, and enters quiescent (sleep) state. If desired, data can also be transmitted real-time.
- **Polled sampling** – On command, MicroCAT takes one sample and sends data to computer. Polled sampling is useful for integrating MicroCAT with satellite, radio, or wire telemetry equipment.
- **Serial line sync**- In response to a pulse on serial line, MicroCAT wakes up, samples, stores data in FLASH memory, sends data to computer, and enter quiescent (sleep) state. If desired, data can also be transmitted real-time. This provides an easy method for synchronizing MicroCAT sampling with other instruments such as Acoustic Doppler Current Profilers (ADCPs) or current meters, without drawing on their battery or memory resources.

Communication Setup Parameters

1. Double click on SeatermV2.exe. SeatermV2 opens; in the Instruments menu, select *SBE 37 RS232*. Seterm232 opens.

2. In Seaterm232's Communications menu, select Configure. Select the Comm port and baud rate (factory set to 9600), and click OK.

3. Seaterm232 should automatically connect to the MicroCAT. As it connects, it sends **GetHD** and displays the response, and then fills the Send Commands window with the list of commands for your MicroCAT.

Deployment

1. Batteries:
   A. *Remove I/O connector end cap*: Wipe dry housing/end cap seam. Remove 2 flat Phillips-head screws from end cap. Pull end cap out. Disconnect Molex connector connecting end cap to battery pack. Wipe dry O-ring mating surfaces in housing with lint-free cloth.
   B. *Remove battery pack and install batteries*: Loosen captured screw in battery pack cover. Use handle to lift battery pack out of housing. Keep handle upright. Unscrew red cover plate from top of battery pack assembly. Roll 2 O-rings on side of battery pack out of grooves. Insert batteries into battery pack, and roll 2 O-rings into grooves on side of battery pack. Align pin on battery cover plate PCB with post hole, keep handle upright, and screw red cover plate onto battery pack assembly.
   C. *Reinstall battery pack and I/O connector end cap*: Align D-shaped opening and notch. Lower battery pack into housing; push gently to mate. Tighten captured screw to secure battery pack in housing. Remove water from O-rings and mating surfaces with lint-free cloth. Inspect O-rings and mating surfaces for dirt, nicks, and cuts. Clean as necessary. Apply light coat of O-ring lubricant to O-ring and mating surfaces. Plug Molex connector together. Fit end cap into housing. Reinstall 2 flat Phillips-head screws to secure.

2. Program MicroCAT for intended deployment (see other side of this sheet for *Command Instructions and List*):
   A. Set time and date.
   B. Establish logging parameters.
   C. Ensure all data has been uploaded, and then send **InitLogging** to make entire memory available for recording. If **InitLogging** is not sent, data will be stored after last recorded sample.
   D. Use one of following sequences to initiate logging:
      - **StartNow** to start logging now, taking a sample every **SampleInterval=** seconds.
      - **StartDateTime=** and **StartLater** to start logging at specified date and time, taking a sample every **SampleInterval=** seconds.
      - **SyncMode=Y** to place MicroCAT in serial line sync mode, so that a simple pulse on RS-232 line will initiate a sample.

3. Wiring to MicroCAT – deploy with dummy plug or I/O cable (for external power and/or serial communication during deployment):
   A. Standard connector: Align raised bump on side of dummy plug/connector with large pin on MicroCAT.
   B. Install locking sleeve.

4. Mount MicroCAT, using Sea-Bird or customer-supplied hardware.

Command Instructions and List

- Input commands in upper or lower case letters and register commands by pressing Enter key.
- If in quiescent (sleep) state, re-establish communications by clicking Connect in Communications menu or pressing Enter key.
- If a new command is not received within 2 minutes after completion of a command, MicroCAT returns to quiescent (sleep) state.
- MicroCAT sends an error message if invalid command is entered.

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

CATEGORY	COMMAND	DESCRIPTION
Status	**GetCD**	Get and display configuration data.
	GetSD	Get and display status data.
	GetCC	Get and display calibration coefficients.
	GetEC	Get and display event counter data.
	ResetEC	Reset event counter.
	GetHD	Get and display hardware data.
	DS	Get and display status.
	DC	Get and display calibration coefficients.
General Setup	**DateTime= mmddyyyyhhmmss**	Set real-time clock month, day, year, hour, minute, second.
	BaudRate=x	**x=** baud rate (600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, or 115200). Default 9600.
	OutputExecutedTag=x	**x=Y**: output XML Executed and Executing tags.　　　　　　**x=N**: do not.
	TxRealTime=x	**x=Y**: output real-time data while sampling in autonomous or serial line sync mode. **x=N**: do not.
	ReferencePressure=x	**x** = reference pressure (decibars) (used when MicroCAT has no pressure sensor).
	QS	Quit session and place MicroCAT in quiescent (sleep) state. Data logging and memory retention are not affected.
Memory Setup	**InitLogging**	Initialize logging to make entire memory available for recording.
	SampleNumber=x	**x=** sample number for last sample in memory. **SampleNumber=0** equivalent to **InitLogging**.
Output Format Setup	**OutputFormat=x**	**x=0**: output raw decimal data.　　　　　　**x=2**: output converted decimal data in XML. **x=1**: output converted decimal data.　　**x=3**: output converted decimal data, alternate form.
	OutputSal=x	**x=Y**: output salinity (psu).　　　　　　　　　　　　　　　　　**x=N**: do not.
	OutputSV=x	**x=Y**: output sound velocity (m/sec).　　　　　　　　　　　　　**x=N**: do not.
Autonomous Sampling (Logging)	**SampleInterval=x**	**x** = interval between samples (6 - 21600 seconds). When commanded to start sampling with **StartNow** or **StartLater**, at **x** second intervals MicroCAT takes sample, stores data in FLASH memory, transmits real-time data (if **TxRealTime=Y**), and goes to sleep.
	StartNow	Start logging now.
	StartDateTime= mmddyyyyhhmmss	Delayed logging start: month, day, year, hour, minute, second
	StartLater	Start logging at delayed start time.
	Stop	Stop logging or stop waiting to start logging. Press Enter key before entering **Stop**. Must send **Stop** before uploading data.
Polled Sampling	**TS**	Take sample, store data in buffer, output data.
	TSH	Take sample, store data in buffer, do not output data.
	TSS	Take sample, store data in buffer and in FLASH memory, output data.
	TSn:x	Take **x** samples, output data.
	SL	Output last sample stored in buffer.
	SLT	Output last sample stored in buffer, then take new sample and store data in buffer.
Serial Line Sync	**SyncMode=x**	**x=Y**: enable serial line sync mode. **x=N**: disable serial line sync mode.
Data Upload	**DDb,e**	Upload scan **b** to scan **e**, in alternate converted decimal form (**OutputFormat=3**) (regardless of user setup for **OutputFormat=**).
	GetSamples:b,e	Upload scan **b** to scan **e**, in format defined by **OutputFormat=**.
Calibration Coefficients	*See manual.*	
Hardware Configuration	*See manual.*	