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

Sampling Modes

Sampling modes include:

- **Autonomous sampling** – There are two types of Autonomous sampling.
  Interval sampling: At pre-programmed intervals, the MicroCAT runs the pump for 1.0 second, samples, transmits data, and stores data in FLASH memory.
  Continuous sampling: The MicroCAT continuously runs the pump, samples, transmits data, and stores data in FLASH memory.

- **Polled sampling** – On command, the MicroCAT runs the pump for 1.0 second, takes 1 sample, and transmits data. Polled sampling is useful for integrating MicroCAT with satellite, radio, or wire telemetry equipment.

- **Serial Line Sync** - A pulse on the serial line causes a MicroCAT to wake up, run the pump for 1.0 second, sample, transmit data, store data in FLASH memory, and enter quiescent (sleep) state automatically. This mode provides easy integration with Acoustic Doppler Current Profilers (ADCPs) or current meters which can synchronize MicroCAT sampling with their own, 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. Wiring to MicroCAT:
   A. Install I/O cable connector: For standard connector, align raised bump on side of connector with large pin on MicroCAT.
   B. Install locking sleeve.
   C. Connect I/O cable connector to computer serial port.
   D. Connect I/O cable connector's red and black wires to power supply (8.5 - 24 VDC).
2. Set date and time (**DateTime=**).
3. Establish setup and operating parameters. Parameters that control operation include:
   - **SampleMode=**
     SampleMode=1: When commanded to sample, take a single sample.
     SampleMode=2: When commanded to sample, sample at intervals defined by **SampleInterval=**.
     SampleMode=3: When commanded to sample, sample continuously.
   - **AutoRun=**
     AutoRun=Y: When power applied, automatically sample as defined by **SampleMode=**.
     AutoRun=N: When power applied, do not begin to automatically sample.
   Note: Pump runs continuously for **SampleMode=3**.
   For all other sampling schemes, pump runs for 1.0 second before MicroCAT takes a sample.

4. Ensure all data has been uploaded from memory, and then send **InitLogging** to make entire memory available for recording. If **InitLogging** is not sent, data will be stored after last recorded sample.

5. Deploy MicroCAT, using optional Sea-Bird mounting hardware or customer-supplied mounting hardware. **Note that MicroCAT is intended for deployment with the connector at the bottom for proper operation – see manual for details.**

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, 115200). Default 9600.
	OutputExecutedTag=x	**x=Y**: output XML Executed and Executing tags. **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.
Pump Setup	**MinCondFreq=x**	**x**= minimum conductivity frequency (Hz) to enable pump turn-on for sampling.
	PumpOn	Turn pump on for testing or to remove sediment.
	PumpOff	Turn pump off, if turned on with **PumpOn**.
Memory Setup	**StoreData=x**	**x=Y**: Store data to FLASH memory when sampling. **x=N**: do not.
	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**: raw decimal data. **x=1**: converted decimal data. **x=2**: converted decimal data in XML. **x=3**: converted binary data. **x=4**: converted decimal data, alternate format. **x=5**: converted data, BSH format.
	OutputTime=x	**x=Y**: output date and time. **x=N**: do not.
	OutputSal=x	**x=Y**: output salinity (psu). **x=N**: do not.
	OutputSV=x	**x=Y**: output sound velocity (m/sec). **x=N**: do not.
	OutputDensity=x	**x=Y**: output local density (kg/m^3). **x=N**: do not.
	OutputDepth=x	**x=Y**: output depth (meters). **x=N**: do not.
	Latitude=x	**x**= latitude (degrees) to use in depth calculation.
Operating	**SampleMode=x**	**x=1**: When command to sample, take single sample. **x=2**: When command to sample, sample at intervals defined by **SampleInterval=**. **x=3**: When command to sample, sample continuously.
	SampleInterval=x	**x** = interval between samples (6 - 21600 seconds) when **SampleMode=2**.
	AutoRun=x	**x=Y**: When power applied, automatically sample as defined by **SampleMode=**. **x=N**: When power applied, do not begin to automatically sample.
	Start	Start sampling, as defined by **SampleMode=**.
	Stop	Stop sampling. 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.
Data Upload	**DDb,e**	Upload scan **b** to scan **e**, in alternate converted decimal form (**OutputFormat=4**) (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.*	