

Note: **ii** in commands is MicroCAT's user-assigned ID (0 – 99). For example, **#01gethd** sends **gethd** to MicroCAT with ID=01.

Setup

1. Install AA lithium cells (Note: **battery pack has a yellow cover plate**):
 - A. *Remove connector end cap*: Wipe dry housing/end cap seam. Remove 2 cap screws from end cap, and twist end cap counterclockwise. Pull end cap out. Disconnect Molex connecting to battery pack. Wipe dry O-ring mating surfaces in housing with lint-free cloth.
 - B. *Remove battery pack and install cells*: Loosen captured screw in battery pack cover. Use handle to lift battery pack out of housing. Keep handle upright. Unscrew yellow cover plate from top of battery pack assembly. Roll 2 O-rings on side of battery pack out of grooves. Insert cells, and roll 2 O-rings into grooves. Align pin on cover plate PCB with post hole, keep handle upright, and screw cover plate onto battery pack.
 - C. *Reinstall battery pack and connector end cap*: Align D-shaped opening and pins on shaft. 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 cap screws.
2. Install cable. Connect to computer serial port.
3. Double click on SeatermV2.exe. SeatermV2 opens; in Instruments menu, select *SBE 37 RS485*. Seaterm485 opens.
4. In Seaterm485's Communications menu, select *Configure*. In dialog box, select Comm port and baud rate (factory set to 9600). Set ID to *Automatically get ID* for 1 MicroCAT on line; set ID to *Use fixed ID* for multiple MicroCATs on line. Click OK.
5. Seaterm485 should automatically connect to MicroCAT. As it connects, it sends **#iiGetHD** and displays response, and then fills Send Commands window with list of commands for your MicroCAT.
6. Program MicroCAT for intended deployment (see other side of this sheet for command list):
 - A. Ensure all data has been uploaded from memory, and then send **#iiInitLogging** to make entire memory available for recording.
 - B. Set Date and Time (**DateTime=** or **#iiDateTime=**).
 - C. Set up other parameters if desired. User-selectable sampling modes include:
 - **Autonomous** – At pre-programmed intervals (**#iiSampleInterval=**), wake up, run pump for 1.0 sec, sample, store data in memory, and go to sleep.
 - **Polled** – On command, run pump for 1.0 sec, take 1 sample, and send data to computer.
 - D. Use one of following sequences to start logging:
 - **#iiStartNow** to start logging now, taking a sample every **#iiSampleInterval=** seconds.
 - **#iiStartDateTime=** and **#iiStartLater** to start logging at specified date and time, taking a sample every **#iiSampleInterval=** seconds.

Deployment

1. Wiring – deploy with dummy plug or cable (for external power and/or serial communication during deployment). Install locking sleeve.
2. Mount MicroCAT, using Sea-Bird or customer-supplied hardware. **MicroCAT is intended for deployment with connector at bottom for proper operation – see manual for details.**

Data Upload

1. Connect cable from MicroCAT to computer.
2. Double click on SeatermV2.exe. SeatermV2 opens; in Instruments menu, select *SBE 37 RS485*. Seaterm485 opens.
3. In Seaterm485's Communications menu, select *Configure*. In dialog box, select Comm port and baud rate (factory set to 9600). Set ID to *Automatically get ID* for 1 MicroCAT on line; set ID to *Use fixed ID* for multiple MicroCATs on line. Click OK.
4. Seaterm485 should automatically connect to MicroCAT. As it connects, it sends **#iiGetHD** and displays response, and then fills Send Commands window with list of commands for your MicroCAT.
5. If sampling autonomously (logging), command MicroCAT to stop logging by sending **#iiStop**.
6. Click Upload menu to upload stored data. Seaterm485 prompts you for upload file name and other upload options.
7. When upload completed, Seaterm485 prompts you to run SBE Data Processing to convert uploaded .hex file to .cnv file for use by other modules in data processing software. Process file and review data to ensure all data has been uploaded.

Command Instructions

- Input commands in upper or lower case letters, and register commands by pressing Enter key.
- MicroCAT sends an error message if invalid command is entered.
- If new command is not received within 2 minutes after completion of a command, MicroCAT returns to quiescent (sleep) state.
- If in quiescent (sleep) state, re-establish communications by selecting *Connect* in Seaterm485's Communications menu, sending two @ characters, or pressing any key.
- For reliable operation, all commands *may* need to be preceded with two @ characters.
Example (status command for MicroCAT 01): @@#01DS

Command List (commands used most commonly in field. See Manual for complete listing and detailed descriptions.)

CATEGORY	COMMAND	DESCRIPTION
MicroCAT ID	ID?	Get MicroCAT ID.
	*ID=ii	Set MicroCAT ID to ii , where ii= 0-99. Command must be sent twice.
Global	DateTime=x	x= mmddyyyymmss (set clock month, day, year, hour, minute, second).
	GData	Command all MicroCATs to run pump, take 1 sample, hold data in buffer until receiving Dataii . Data not stored in FLASH memory.
	PwrOff	Enter quiescent (sleep) state. Main power turned off, but data logging and memory retention unaffected.
Get Data	Dataii	Get data obtained with GData .
Status	#iiGetCD	Get and display configuration data.
	#iiGetSD	Get and display status data.
	#iiGetCC	Get and display calibration coefficients.
	#iiGetEC	Get and display event counter data.
	#iiResetEC	Reset event counter.
	#iiGetHD	Get and display hardware data.
	#iiDS	Get and display status.
General Setup	#iiDC	Get and display calibration coefficients.
	#iiBaudRate=x	x= baud rate (600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, or 115200).
	#iiRxDelay=x	x= delay after MicroCAT receives command until transmitter enabled (1 - 500 msec). Default 25 msec.
	#iiTxDelay=x	x= delay after MicroCAT transmits reply until transmitter disabled (1 - 500 msec). Default 25 msec.
	#iiDateTime=x	x= mmddyyyymmss (set clock month, day, year, hour, minute, second).
	#iiOutputExecutedTag=x	x=Y: output XML Executed and Executing tags. x=N: do not.
	#iiOutputBusyTag=x	x=Y: output Busy tag if a command is sent while MicroCAT is sampling in response to GData . x=N: do not.
Pump Setup	#iiReferencePressure=x	x= reference pressure (gauge) in db (used when MicroCAT has no pressure sensor).
	#iiMinCondFreq=	X= minimum conductivity frequency (Hz) to enable pump turn-on for sampling.
	#iiPumpOn	Turn pump on for testing or to remove sediment.
Memory Setup	#iiPumpOff	Turn pump off, if turned on with #iiPumpOn .
	#iiInitLogging	Initialize logging to make entire memory available for recording.
Output Format Setup	#iiSampleNumber=x	x= sample number for last sample in memory. #iiSampleNumber=0 equivalent to #iiInitLogging .
	#iiOutputFormat=x	x=0: raw decimal data. x=1: converted decimal data. x=2: converted decimal data in XML.
	#iiOutputTemp=x	x=Y: Output temperature. x=N: Do not.
	#iiSetTempUnits=x	x=0: Temperature °C, ITS-90. x=1: Temperature °F, ITS-90.
	#iiOutputCond=x	x=Y: Output conductivity. x=N: do not.
	#iiSetCondUnits=x	Conductivity, specific conductivity units. x=0: S/m. x=1: mS/cm. x=2: µS/cm.
	#iiOutputPress=x	x=Y: Output pressure. x=N: do not.
	#iiSetPressUnits=x	x=0: Pressure decibars. x=1: Pressure psi (gauge).
	#iiTimeFormat=x	x=0 (default): dd mmm yyyy, hh:mm:ss. x=1: yyyy-mm-ddThh:mm:ss. x=2: hh:mm:ss, dd-mm-yyyy. x=3: hh:mm:ss, mm-dd-yyyy.
	#iiOutputSal=x	x=Y: calculate and output salinity (psu). x=N: do not.
	#iiOutputSV=x	x=Y: calculate and output sound velocity (m/sec). x=N: do not.
	#iiOutputSC=x	x=Y: calculate and output specific conductivity. x=N: do not.
	#iiTxSampleNum=x	x=Y: calculate and output sample number with data. x=N: do not.
	Autonomous Sampling (Logging)	#iiSampleInterval=x
#iiStartNow		Start logging now.
#iiStartDateTime=x		x= mmddyyyymmss (delayed logging start: month, day, year, hour, minute, second.)
#iiStartLater		Start logging at delayed logging start time.
Polled Sampling	#iiStop	Stop logging or waiting to start logging. Send #iiStop before uploading data.
	#iiTS	Do not pump. Take sample, store in buffer, output data.
	#iiTSR	Do not pump. Take sample, store in buffer, output data in raw decimal form.
	#iiTPS	Run pump for 1.0 sec, take sample, store in buffer, output data.
	#iiTPSH	Run pump for 1.0 sec, take sample, store in buffer, do not output data.
	#iiTPSS	Run pump for 1.0 sec, take sample, store in buffer and in FLASH memory, output data.
	#iiTSN:x	Do not pump. Take x samples, output data.
	#iiTPSN:x	Run pump continuously while taking x samples and outputting data.
	#iiSL	Output last sample in buffer.
	#iiSLTP	Output last sample in buffer, then run pump for 1.0 sec, take new sample, and store in buffer.
Data Upload	#iiSLTPR	Output last sample in buffer in raw decimal format, then run pump for 1.0 sec, take new sample, and store in buffer.
	#iiDNx	Upload last x scans from FLASH memory.
	#iiGetSamples:b,e	Upload data from scan b to e , in format defined by #iiOutputFormat .
Calibration Coefficients	#iiDdb,e	Upload data from scan b to e , in converted decimal form (#iiOutputFormat=1).
	<i>See manual</i>	