

# SBE 37-SI (RS-485) MicroCAT Reference Sheet

(see SBE 37-SI [RS-485] MicroCAT User's Manual for complete details)

## System Setup

1. Install I/O cable connector, aligning raised bump on connector side with large pin on MicroCAT. Connect to computer serial port and power supply.
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. Set Date and Time — see Command Instructions and Command List.
6. Set up other parameters as desired — see Command Instructions and Command List. User-selectable sampling modes include:
  - **Autonomous** – At pre-programmed intervals, MicroCAT wakes up, samples, stores data in memory, and goes to sleep.
  - **Polled** – On command, MicroCAT takes 1 sample and sends data to computer. Useful for integrating with satellite, radio, or wire telemetry equipment.
  - **Serial Line Sync** - In response to simple pulse (or single character) on serial line, MicroCAT wakes up, samples, stores data in memory, transmits data (if **#iiTxSyncMode=Y**), and goes to sleep.

## Deployment

1. Wiring– Install I/O cable connector, aligning raised bump on side of connector with large pin on MicroCAT. Install locking sleeve. Connect I/O cable connector to computer serial port and power supply.
2. Deploy MicroCAT, using optional Sea-Bird mounting brackets or customer-supplied hardware.

## Data Uploading

1. Connect I/O 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.
7. Select *Convert .XML data file* in Tools menu to convert uploaded .xml file to .cnv file for use by data processing software (SBE Data Processing).
8. Process file and review data in Sea-Bird data processing software 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

Shown on page 2 are the commands used most commonly in the field. See the Manual for complete listing and detailed descriptions.

## Command List

CATEGORY	COMMAND	DESCRIPTION
ID	ID?	Get MicroCAT ID.
	*ID=ii	Set MicroCAT ID to <b>ii</b> , where ii= 0-99. Command must be sent twice.
Global	DateTime= mmddyyyyhhmmss	Set clock month, day, year, hour, minute, second.
	GData	Command <b>all</b> MicroCATs to take 1 sample. MicroCATs hold data in buffer until receiving <b>Dataii</b> . 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 <b>GData</b> .
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 or !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= mmddyyyyhhmmss	Set clock month, day, year, hour, minute, second.
	#iiOutputExecutedTag=x	x=Y: output XML Executed and Executing tags. x=N: do not.
Memory Setup	#iiReferencePressure=x	x= reference pressure (gauge) in db (used when MicroCAT has no pressure sensor).
	#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: 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 format.
	#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.
	#iiOutputDensity=x	x=Y: calculate and output local density. x=N: do not.
	#iiOutputDepth=x	x=Y: calculate and output depth (m). x=N: do not.
Autonomous Sampling (Logging)	#iiLatitude=x	x= latitude (degrees) to use in depth calculation.
	#iiSampleInterval=x	x = interval between samples (6 – 21,600 seconds). When commanded to start sampling with #iiStartNow or #iiStartLater, at x second intervals MicroCAT takes sample, stores data in FLASH memory, and goes to sleep.
	#iiStartNow	Start logging now.
	#iiStartDateTime= mmddyyyyhhmmss	Delayed logging start: month, day, year, hour, minute, second.
	#iiStartLater	Start logging at delayed logging start time.
	#iiStop	Stop logging or waiting to start logging. Send #iiStop before uploading data.
Polled Sampling	#iiTS	Take sample, store data in buffer, output data.
	#iiTSR	Take sample, store data in buffer, output data in raw decimal form (regardless of #iiOutputFormat=).
	#iiTSH	Take sample, store data in buffer, do not output data.
	#iiTSS	Take sample, store data in buffer and in FLASH memory, output data.
	#iiTSn:x	Take x samples and output data.
	#iiSL	Output last sample stored in buffer.
	#iiSLT	Output last sample stored in buffer, then take new sample, and store data in buffer.
Serial Line Sync	#iiSyncMode=x	x=Y: Enable serial line sync mode. x=N: Disable serial line sync mode.
	#iiTxSyncMode=x	x=Y: Transmit real-time data in serial line sync mode. x=N: do not.
Data Upload	#iiDDb,e	Upload data from scan <b>b</b> to <b>e</b> , in alternate converted decimal form (#iiOutputFormat=3) (regardless of setting for #iiOutputFormat).
	#iiGetSamples:b,e	Upload data from scan <b>b</b> to <b>e</b> , in format defined by #iiOutputFormat.
Calibration Coefficients	<i>See manual</i>	
Hardware Configuration	<i>See manual.</i>	