

SBE 37-SI (RS-232) MicroCAT Reference Sheet

(see SBE 37-SI MicroCAT User's Manual for complete details)

Sampling Modes

- **Autonomous sampling** – There are two types of Autonomous sampling.
Interval sampling: At pre-programmed intervals, the MicroCAT samples and transmits data. Jumper positioning determines whether the MicroCAT enters quiescent (sleep) state between samples.
Continuous sampling: The MicroCAT continuously samples and transmits data, and does not enter quiescent (sleep) state between samples.
- **Polled sampling** – On command, the MicroCAT 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, sample, transmit data, 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 SeaTerm.exe.
2. Once main screen appears, in Configure menu select SBE 37. Click on COM settings tab in dialog box. Input:
 - Comm Port: COM1 through COM10 are available
 - Baud Rate: 9600 (or other if applicable)
 - Data Bits: 8
 - Parity: No Parity
 - Mode: RS-232 (Full Duplex)

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 (7-24 VDC).
2. Verify Power-Up Jumper J1 on Interface PCB (labeled 10200) inside MicroCAT's housing is correctly set (see manual for procedure for removing PCB from housing to access) by observing response to **QS**:
 - Normal (default) – pins 1 and 2: system does not return S> after **QS** is sent, indicating MicroCAT is asleep.
 - Autopower – pins 2 and 3: system returns S> after **QS** is sent, indicating MicroCAT is not asleep.
3. Set time and date.
4. Establish setup and operating parameters.

Interface PCB J1 Jumper	AUTORUN	SINGLESAMPLE	Effect
Normal	N	Y or N	Wake up (when Connect on Toolbar clicked or Enter key pressed) and wait for command.
	Y	N	Wake up (when Connect on Toolbar clicked or Enter key pressed) and sample at rate specified by INTERVAL . To stop sampling and get S> prompt, type STOP and press Enter key.
	Y	Y	Wake up (when Connect on Toolbar clicked or Enter key pressed), take and output a single sample, and automatically go to sleep. To wake up and get S> prompt, type STOP and press Enter key. Referred to as Serial Line Sync Mode .
Autopower	N	Y or N	Wake up (when power applied) and wait for command.
	Y	N	Wake up (when power applied) and sample at rate specified by INTERVAL until power removed. MicroCAT does not go to sleep between samples, regardless of INTERVAL value.
	Y	Y	This is not a valid combination of settings.

5. Deploy MicroCAT, using optional Sea-Bird mounting hardware or customer-supplied mounting 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 on Toolbar or pressing Enter key to get S> prompt.
- If system does not return S> prompt after executing a command, press Enter key twice to get S> prompt.
- MicroCAT sends ?CMD 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	DS	Display status.
Setup	MMDYY=mmddy	Set real-time clock month, day, year. Must follow with HHMMSS= .
	DDMMYY=ddmmyy	Set real-time clock day, month, year. Must follow with HHMMSS= .
	HHMMSS=hhmmss	Set real-time clock hour, minute, second.
	BAUD=x	x= baud rate (1200, 2400, 4800, 9600, 19200, 38400). Default 9600.
	OUTPUTTIME=x	x=Y: output date and time with data. x=N: do not.
	OUTPUTSAL=x	x=Y: output salinity (psu) with data. x=N: do not.
	OUTPUTSV=x	x=Y: output sound velocity (m/sec) with data. x=N: do not.
	OUTPUTDEPTH=x	x=Y: output depth (meters) with data. x=N: do not.
	OUTPUTDENSITY=x	x=Y: output local density sigma (kg/m ³) with data. x=N: do not.
	LATITUDE=x	x= latitude (degrees) to use in depth calculation.
	REFPRESS=x	x = reference pressure (decibars) (used when MicroCAT has no pressure sensor).
	FORMAT=x	x=1: output converted data, date dd mmm yyyy x=2: output converted data, date mm-dd-yyyy
	OUTPUTBINARY=x	x=Y: output data in binary form. x=N: do not.
	NCYCLES=x	x = number of A/D cycles to average (range 1 - 127; default 4).
	PUMPINSTALLED=x	x=N: internal pump not installed (only valid setting for 37-SI).
	QS	Quit session and place MicroCAT in quiescent (sleep) state. Sampling stops. Applicable only if Interface PCB J1 jumper in Normal position.
Operating Interface PCB's J1 jumper interacts with these commands: • Normal – pins 1 and 2 • Autopower – pins 2 and 3	INTERVAL=x	x = interval between samples (10 - 32767 seconds). If x < 10, sample continuously.
	AUTOOFF=x	(Functional only if J1 jumper in Normal position) x=Y: Go to sleep if 2 minutes have elapsed without receiving command or sampling data. x=N: Do not automatically go to sleep.
	J1 jumper - Normal AUTORUN=N SINGLESAMPLE=Y or N	Wake up (when Connect on Toolbar clicked or Enter key pressed) and wait for command.
	J1 jumper - Normal AUTORUN=Y SINGLESAMPLE=N	Wake up (when Connect on Toolbar clicked or Enter key pressed) and sample at rate specified by INTERVAL . To stop sampling and get S> prompt, type STOP and press Enter key.
	J1 jumper - Normal AUTORUN=Y SINGLESAMPLE=Y	Wake up (when Connect on Toolbar clicked or Enter key pressed), take and output single sample, and go to sleep. To wake up and get S> prompt, type STOP and press Enter key. Referred to as Serial Line Sync Mode .
	J1 jumper - Autopower AUTORUN=N SINGLESAMPLE=Y or N	Wake up (when power applied) and wait for command.
	J1 jumper - Autopower AUTORUN=Y SINGLESAMPLE=N	Wake up (when power applied) and sample at rate defined by INTERVAL until power removed. MicroCAT does not go to sleep between samples, regardless of INTERVAL .
	GO	Start sampling, as defined by SINGLESAMPLE and INTERVAL .
	STOP	Stop sampling.
Sampling Do not send if MicroCAT is sampling data at pre-programmed intervals.	TS	Take sample, hold converted data in RAM, output converted data
	TSR	Take sample, hold raw data in RAM, output raw data.
	SLT	Send converted data from last sample in RAM, then take new sample and hold converted data in RAM.
	TH	Take sample, hold converted data in RAM.
	SH	Send held converted data from RAM.
	SB	Send held converted data from RAM in binary (applicable only if OUTPUTBINARY=Y).
Coefficients	DC	Display calibration coefficients.