

SEAS TSG Data Recorder User's Guide

Introduction



The SBE 45 MicroTSG Thermosalinograph is externally powered, high accuracy, conductivity and temperature recorders, designed for shipboard determination of sea surface (pumped-water) conductivity and temperature.

The SEAS TSG (Thermosalinograph) Data Recorder is a real time data acquisition, data processing, and data recording application that operates on vessels where there is a SBE 45 MicroTSG Thermosalinograph unit installed collecting TSG data. It receives continuously the measured sea surface temperature and conductivity data over the serial port RS-232.

SEAS Transceiver Interface application or a [NMEA](#) device gives the ship's position. Every received TSG data is archived in a file that will be zipped at 12:00 am every day, and will be copied to the Iridium's queue for the transmission via satellite.

The user can sets the collection sampling interval in seconds between samples that the SEAS TSG Data Recorder takes and archives, and the transmission sampling interval in seconds between samples that the SEAS TSG Data Recorder takes and put ready to transmit.

It was developed in the Integrated Development Environment (IDE) from Microsoft Visual Studio C++ 2008 Standard Edition under Windows 7.

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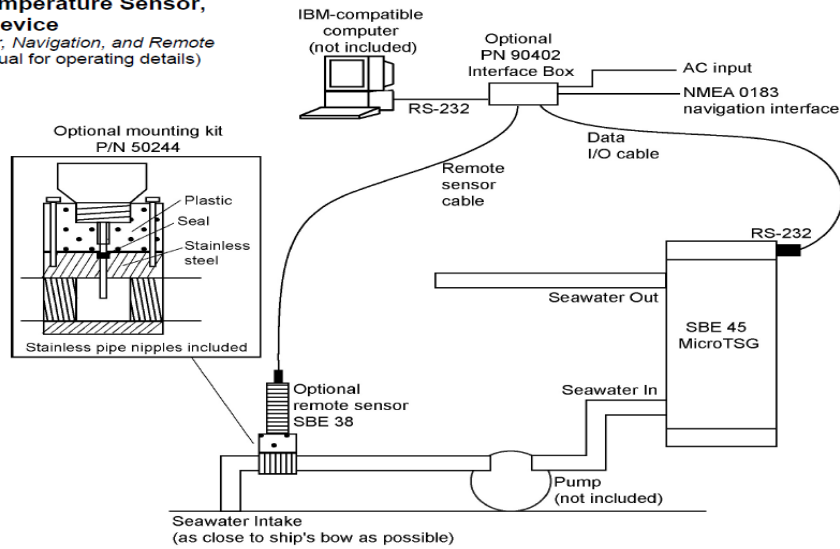
E-mail: caridad.i.gonzalez@noaa.gov

How does it work?

SBE 45 MicroTSG Thermosalinograph

Hardware installation

MicroTSG with Optional PN 90402 Interface Box, SBE 38 Remote Temperature Sensor, and NMEA Navigation Device
 (see PN 90402 – SBE 45 Power, Navigation, and Remote Temperature Interface Box manual for operating details)



System communication

The Interface Box merges GPS data and SBE 38 remote temperature data with SBE 45 data. The data, in ASCII engineering units, is passed to the computer for storage and/or display.

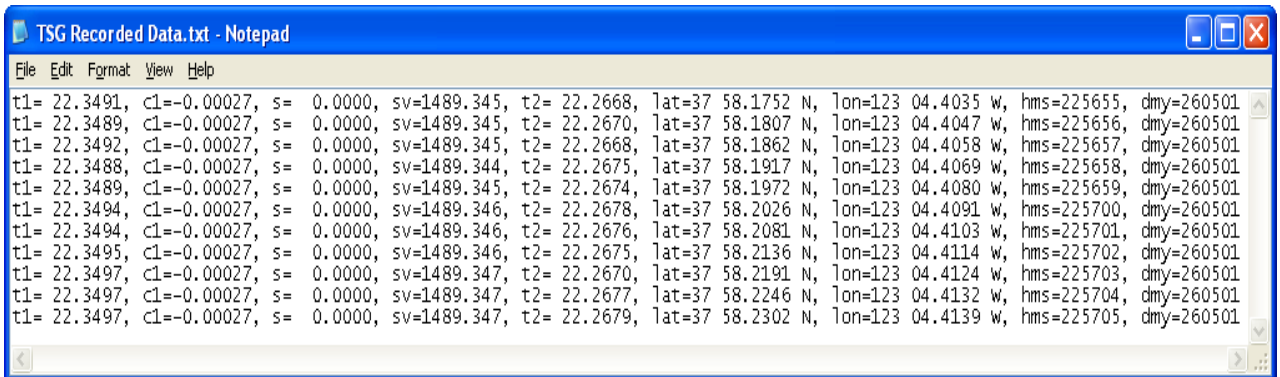


Once the system is ready for deployment is important to paid attention to the serial port settings on the SEAS TSG Data Recorder side. The length of the cable and the baud rate are related, see hardware documentation for more information.

Computer serial port setting:

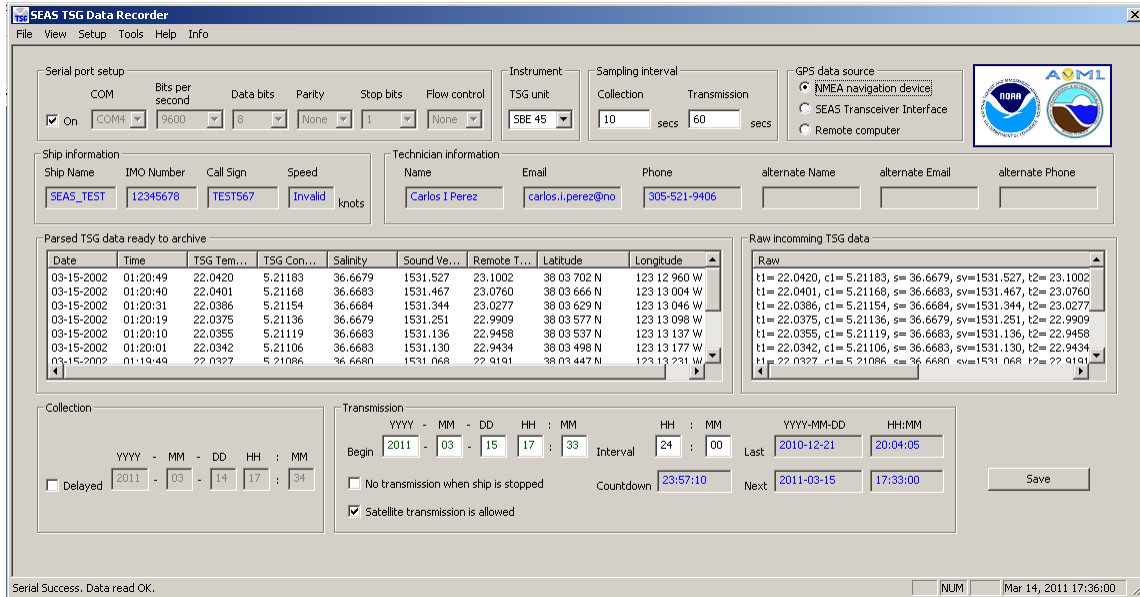
SBE 45 MicroTSG	
Baud rate	9600
Data bits	8
Parity	None
Stop bits	1
Flow Control	None

The time between each output scan is governed by the [SBE 45 MicroTSG](#) setup. The [Interface Box](#) outputs the most recent data from the [SBE 38 remote temperature sensor](#) and/or GPS device with each scan of SBE 45 data. The SEAS TSG Data Recorder set the sampling interval to 1 second as default.



User Interface

The **Graphic User Interface (GUI)** is simple, and makes the application interfaces intuitive, learnable, and consistent. To do easier the work with the application, the controls, and assesses are grouped.



Main screen

Serial port setup group: Sets up the serial port communication.

On: Starts or stops the read data task via serial port.

Instrument group: Chooses the used TSG unit (SBE 45).

Sampling interval group: Sets up the sampling interval.

Collection: Sampling interval in seconds between samples that the SEAS TSG Data Recorder takes and archives.

Transmission: Sampling interval in seconds between samples that the SEAS TSG Data Recorder takes and put ready to transmit.

GPS data source group: Selects the source to read the GPS data. It could be the connected [NMEA](#) device to the Interface Box, the SEAS Transceiver Interface application, or another application running in a remote computer that transmits data across the wire.

Ship setup group: Shows the ship information, and displays the ship's speed.

Technician setup group: **Name**, **Email** and **Phone** show the TSG technician's information, **alternate Name**, **alternate Email** and **alternate Phone** are for the alternate TSG technician.

Parsed TSG data ready to archive list: Displays the incoming TSG and GPS data, this read from SEAS Transceiver Interface or from [NMEA](#) device. These collected data will be recorded into ...\\Archive\\TsgDataRecorder\\SrvArchv directory.

Raw incoming TSG data list: Displays the read ASCII string received from the TSG unit. The information is giving in following format:

t1= 22.3107, c1=-0.00027, s= 0.0000, sv=1489.235, t2= 22.4613[, lat= 25 44.07 N, lon= 080 09.71 W, hms= 131234, dmy= 290410]

Where

t1 = SBE 45 temperature
c1 = SBE 45 conductivity
s = salinity
sv = sound velocity
t2 = SBE 38 temperature
lat = latitude from NMEA navigation device
lon = longitude from NMEA navigation device
hms = time from NMEA navigation device
dmy = date from NMEA navigation device

Each scan ends with a carriage return <CR> and line feed <LF>.

Collection group: Sets up the collection process. The collection of data can be **Delayed** until a future time; this is when the collection of data will begin for transmission. This could be used if the user is in port and he know when will be leaving later.

Transmission group: Sets the transmission process setup, and display information.

Begin: Sets the time to begin the transmission process.

No transmission when ship is stopped: Chooses if the collected data to transmit will be transmitted when the ship is stopped (speed less than or equal to 1 knot) or not.

Satellite transmission is allowed: Starts or stops the task that copies the recorded data to the Iridium's queue for the real transmission via satellite using the Iridium Mailer Service.

Interval: Sets the transmission lapse in which the data will be transmitted; it should be greater or equal 5 minutes, the time it takes to make the application initialization.

Countdown: Displays the time remaining for the next transmission.

Last: Shows the moment when the last transmission took place.

Next: Displays the moment when the next transmission will take place.

Button Save: Makes active the new application configuration, and saves any configuration change from serial port, TSG unit, ship or technician into **TsgDataRecorder.ini** file.

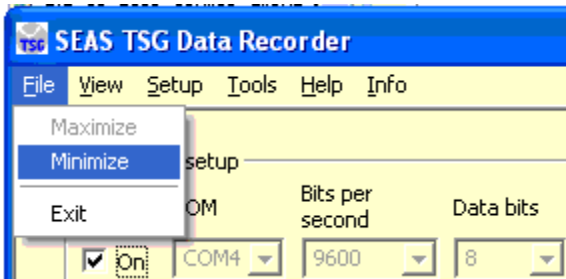
Status bar: Provides status information from serial port communication, and application.

Main Menu

File > Maximize: This command is always disabled see system tray to know how to maximize the SEAS TSG Data Recorder application window.



File > Minimize: Use this command to minimize the SEAS TSG Data Recorder application window. An icon will be display in the system tray.



The notification area -commonly referred as the system tray for Microsoft- is the portion of the taskbar usually at the bottom right corner that

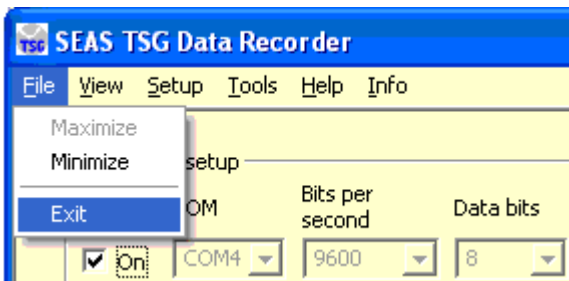


displays icons for easy access to system functions such as printer, modem, sound volume, battery status, and more. It is used to launch and monitor running applications.

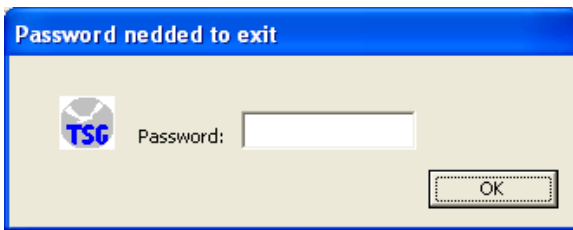
A single right click on the tray icon will bring up a menu while a double click will perform the default action (**Minimize** or **Maximize** the SEAS TSG Data Recorder application window).



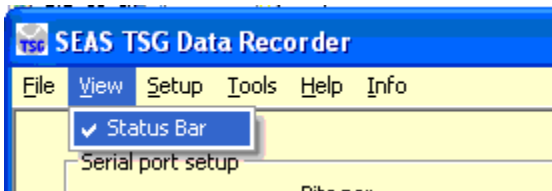
File > Exit: Use this command to exit the SEAS TSG Data Recorder application.



Since the SEAS TSG Data Recorder needs to stay running all the time unless they are explicitly terminated it prompts the user for a password to exit the application.



View > Status Bar: Use this command to show or hide the status bar.



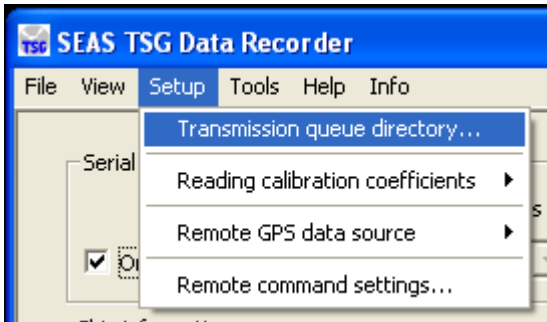
This command displays and hides the status bar, which describes the action to be executed by the selected menu item, and keyboard latch state. A checkmark appears next to the menu item when the status bar is displayed.

The status bar is displayed at the bottom of the SEAS TSG Data Recorder window. The left area of the status bar describes actions of menu items as you use the arrow keys to navigate through menus. This area similarly shows messages that describe the application's status.

The right areas of the status bar indicate which of the following keys are latched down:

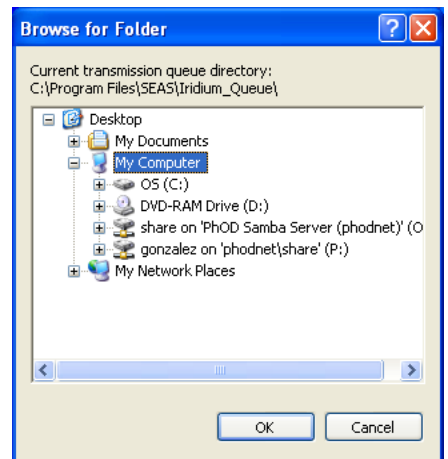
Indicator	Description
CAP	The Caps Lock key is latched down.
NUM	The Num Lock key is latched down.
SCRL	The Scroll Lock key is latched down.
DATE	The system clock.

Setup > Transmission queue directory: Use this command to select the transmission queue path.

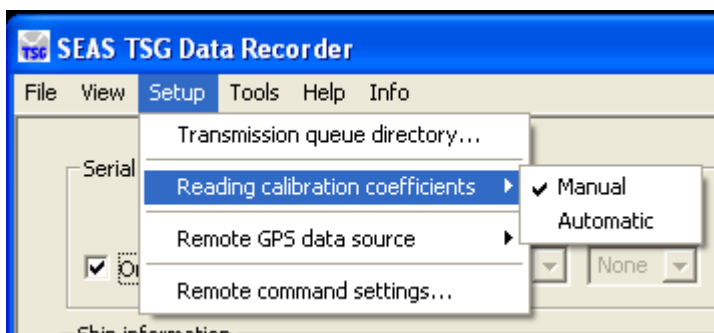


Using this command you can select the transmission queue directory, where SEAS TSG Data Recorder will post the files ready to transmit. A **Browser for Folder** dialog appears that allows the user to select a folder.

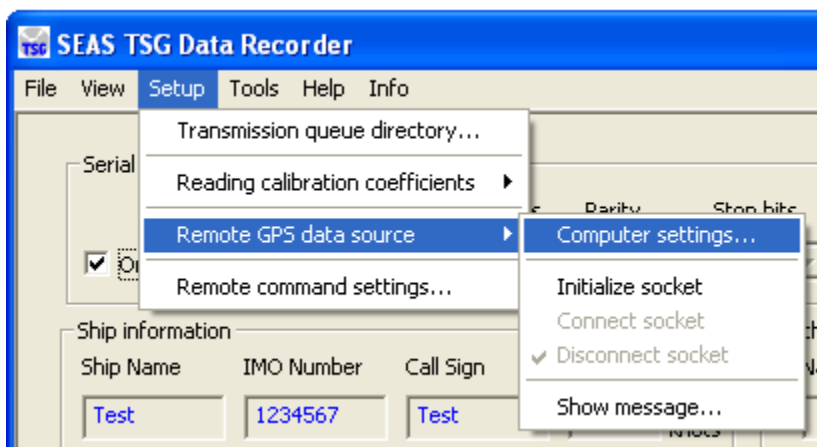
When this dialog box comes up, it displays the **Desktop** folder as the parent and all the other folders can be located from it. To use it, the user can click one of the folders or drives and click **OK**. If the desired folder is not seen but is available, the user can expand the existing folders and drives, click the desired folder, and click **OK**. If the necessary folder is not available at all, the user should first create the desired folder outside the application.



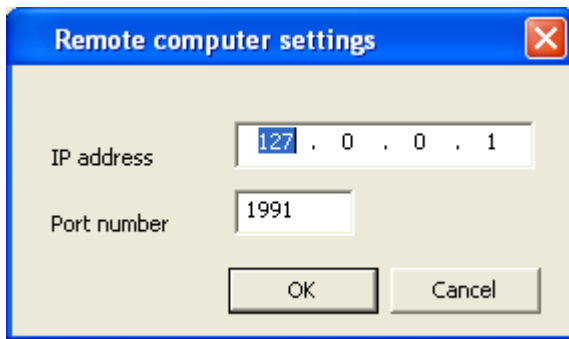
Setup > Reading calibration coefficients: Use this command to select if the SEAS TSG Data Recorder read the calibration coefficients from the [SBE 45 MicroTSG](#), and [SBE 38 remote temperature sensor](#), and updates the GUI automatically or the user has to type them.



Setup > Remote GPS data source|Computer settings: Use this command to set the IP address, and the port number of the remote computer, which provides a GPRMC sentence.



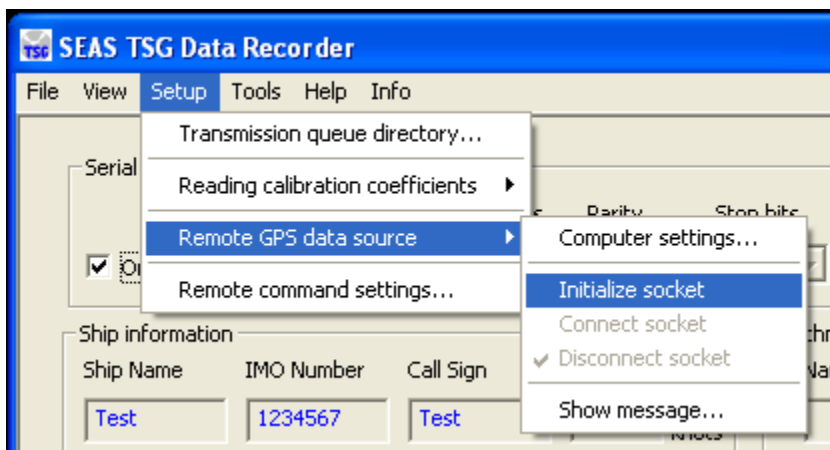
Once selected the window **Remote computer settings** appears.



Type the IP address of the remote computer, and insert the port number. Click **OK**.

The TSG Data Recorder will connect with this remote computer via socket.

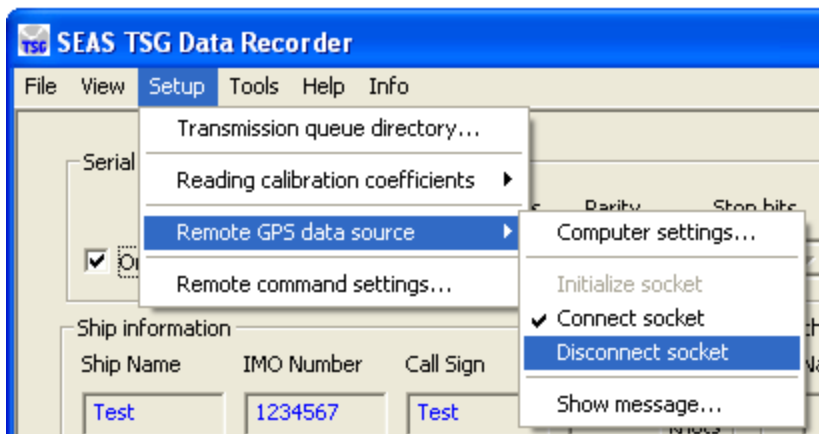
Setup > Remote GPS data source > Initialize socket: Use this command to create, and to initiate the socket for connecting to server.



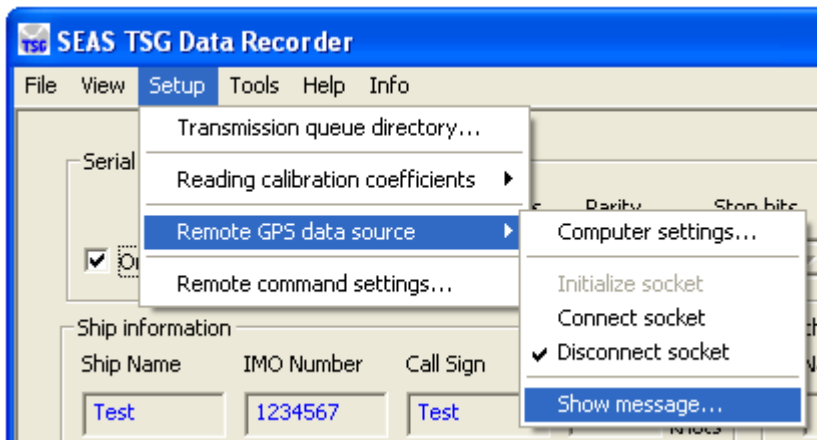
Setup > Remote GPS data source > Connect socket: Use this command to connect the socket.



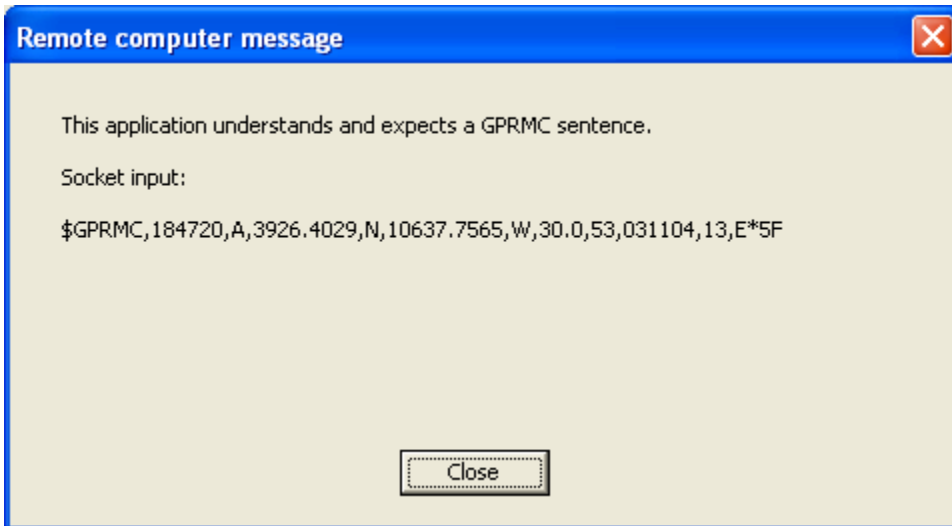
Setup > Remote GPS data source > Disconnect socket: Use this command to disconnect the socket.



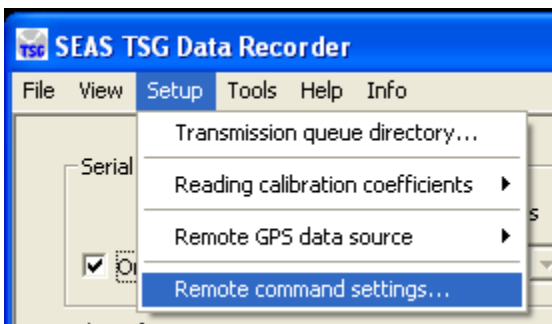
Setup > Remote GPS data source > Show message: Use this command to show the socket input.



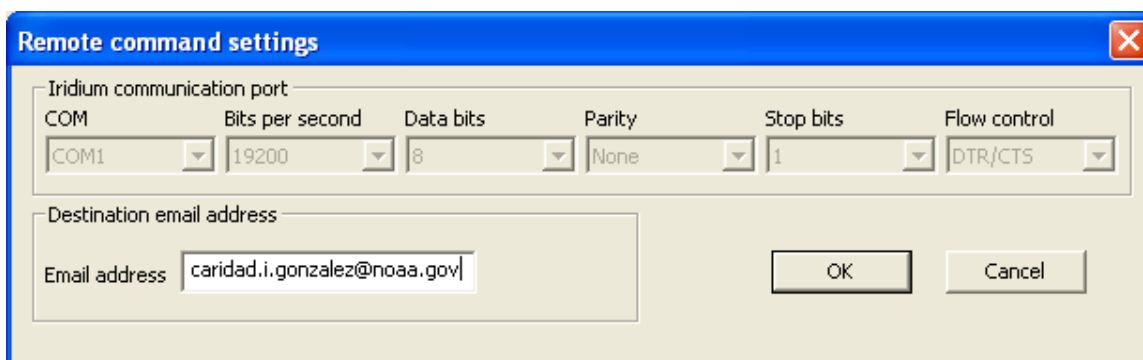
Once selected the window **Remote computer message** appears.



Setup > Remote command settings: Use this command to set the destination email address, which eventually get a diagnostic text message.

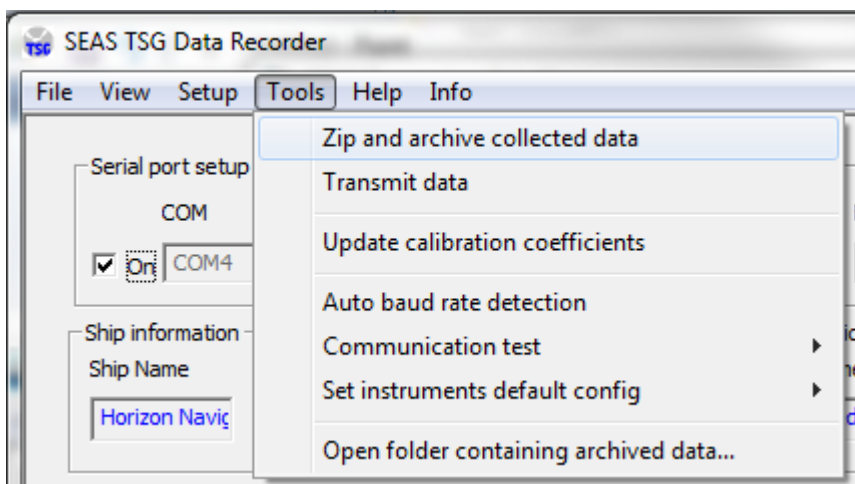


Once selected the window **Remote command settings** appears.

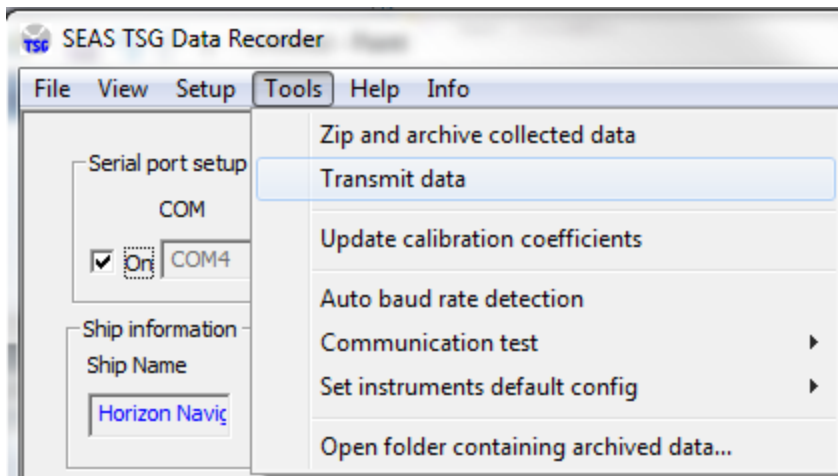


Type the destination email address. Click **OK**.

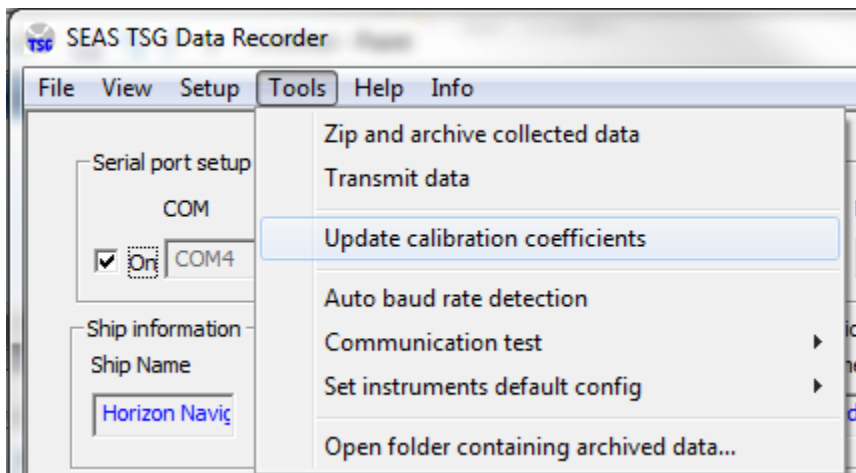
Tools > Zip and archive collected data: Use this command to put inside the zip folder all files generated with the collected data to archive.



Tools > Transmit data: Use this command to pack the Xdata_CallSign_TSG_YYMMDDHHMMSS.txt file, and to put the zipped folder in to the Iridium Mailer Service's queue.



Tools > Update calibration coefficients: This command reads, and updates the calibration coefficients.



The calibration coefficients can be read automatically from [SBE 45 MicroTSG](#), and [SBE 38 remote temperature sensor](#) when the application starts or when the user clicks the option **Automatic**. The read calibration coefficients process takes a while.

The calibration coefficients are very important metadata that have to be transmitted. If you use this command the dialog **SEAS TSG Data Recorder – Calibration Coefficients** comes up. If the **Reading calibration coefficients** selected option is **Automatic**, the dialog box shows the automatically read calibration coefficients of the instruments, and the user doesn't have access to some edit fields. Otherwise, if the selected option is **Manual** the user has to type the coefficients.

The screenshot shows a software window titled "SEAS TSG Data Recorder - Calibration Coefficients". It contains two main panels for configuring calibration data.

TSG unit (SBE45):

- Model Number: SBE45
- Serial Number: 0073
- Intake depth: 2.00 meters
- Pipe length: 2.50 meters
- Conductivity Calibration Date: 08-may-07
- Temperature Calibration Date: 08-may-07
- CG: -9.776560e-01
- CH: 1.440116e-01
- CI: -1.165459e-04
- CJ: 3.229662e-05
- CPCOR: -9.570000e-08
- CTCOR: 3.250000e-06
- WBOTC: 1.077696e-05
- TA0: -6.063892e-06
- TA1: 2.783052e-04
- TA2: -2.645087e-06
- TA3: 1.581528e-07

Remote sensor (SBE 38):

- Model Number: SBE 38
- Serial Number: 00180
- Intake depth: 2.00 meters
- Pipe length: 2.50 meters
- Temperature Calibration Date: 11-jun-08
- TA0: -1.335250e-05
- TA1: 2.763461e-04
- TA2: -2.415561e-06
- TA3: 1.561423e-07
- Slope: (empty field)
- Offset: (empty field)

Buttons: OK, Cancel

TSG unit group: Shows the calibration coefficients read automatically from the instruments. **Pipe length** and **Intake depth** correspond to the TSG physical architecture.

Intake depth represents how deep the intake of the TSG water into the ship is below sea level.

Pipe length is the length of pipe from water to TSG unit.

Fo is the frequency.

Remote sensor group: Shows the calibration coefficients read automatically from the instruments. **Intake depth** corresponds to the TSG physical architecture.

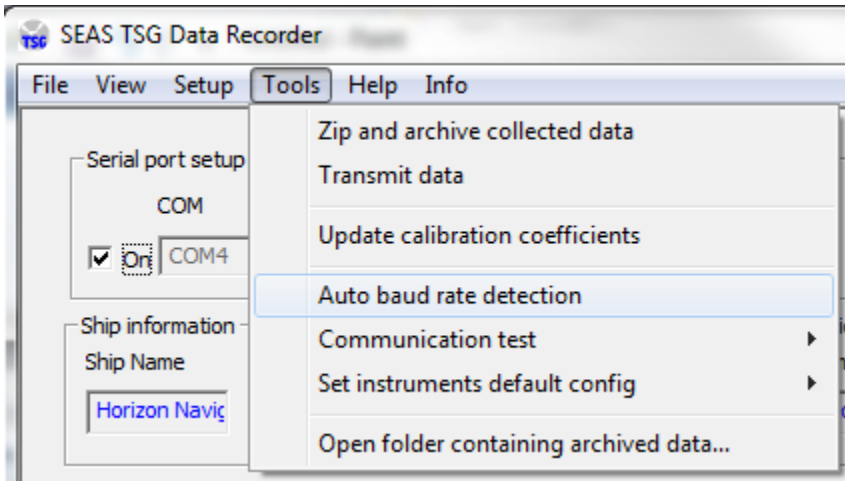
Intake depth represents how deep the intake of the TSG water into the ship is below sea level.

Pipe length is the length of pipe from water to remote sensor.

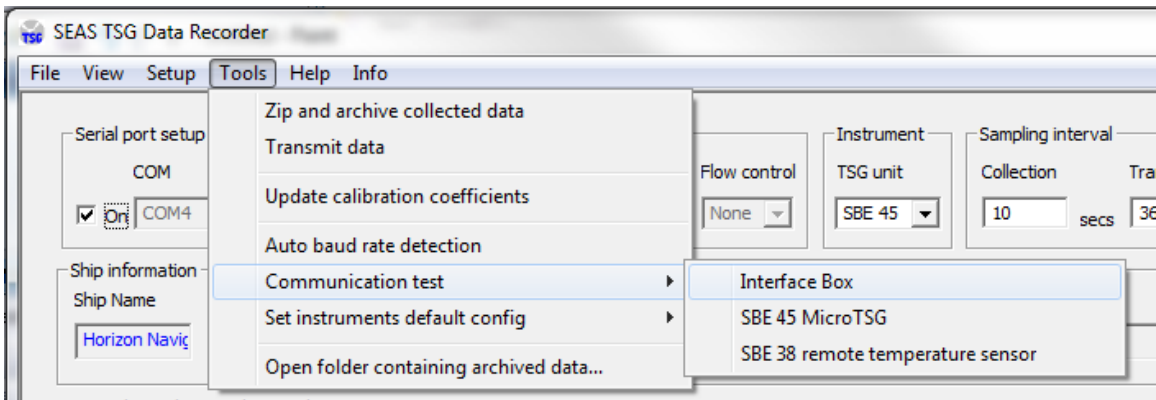
Button OK: Saves any metadata change into **TsgDataRecorder.ini** file.

Button Cancel: Ignores any change.

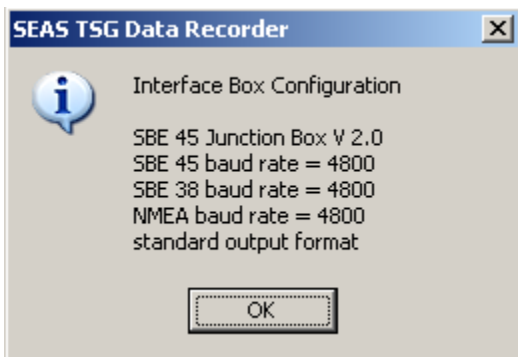
Tools > Auto baud rate detection: Use this command to change the baud rate in the [SBE 45 MicroTSG](#) and/or [SBE 38 remote temperature sensor](#) for compatibility with the [Interface Box](#). This automatic detection is useful for establishing communication between the instruments.



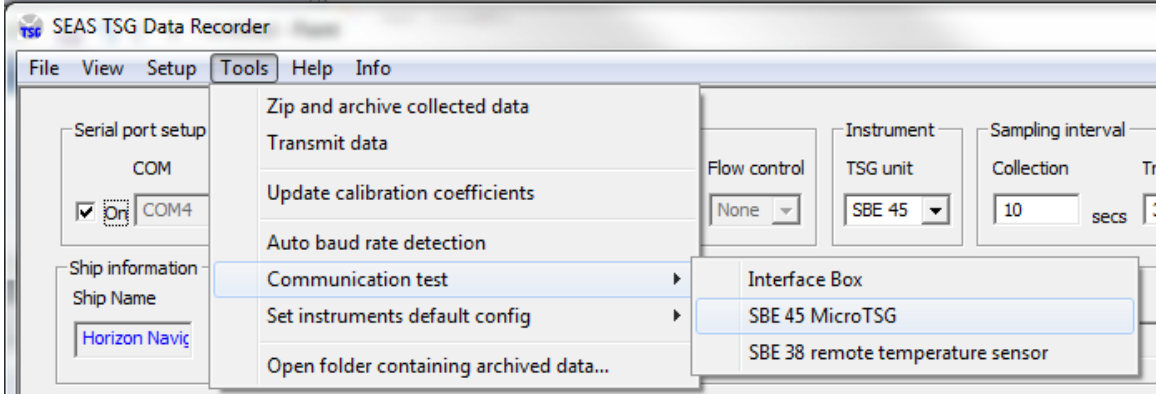
Tools > Communication test > Interface Box: Use this command to test if the application is able to communicate with the [Interface Box](#), and displays its configuration.



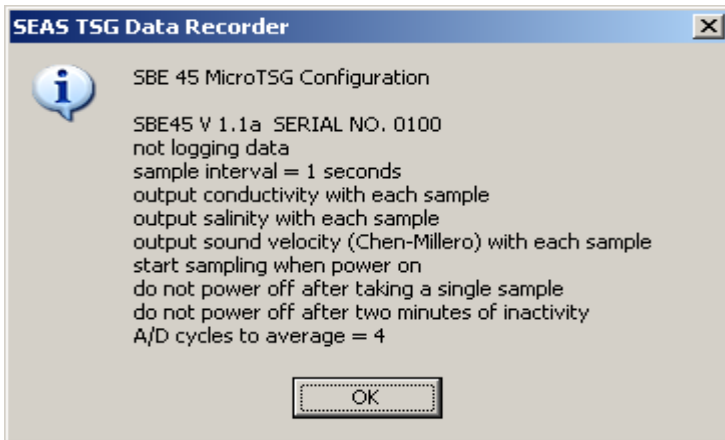
If the communication is established a screen with the current [Interface Box](#) configuration will appear.



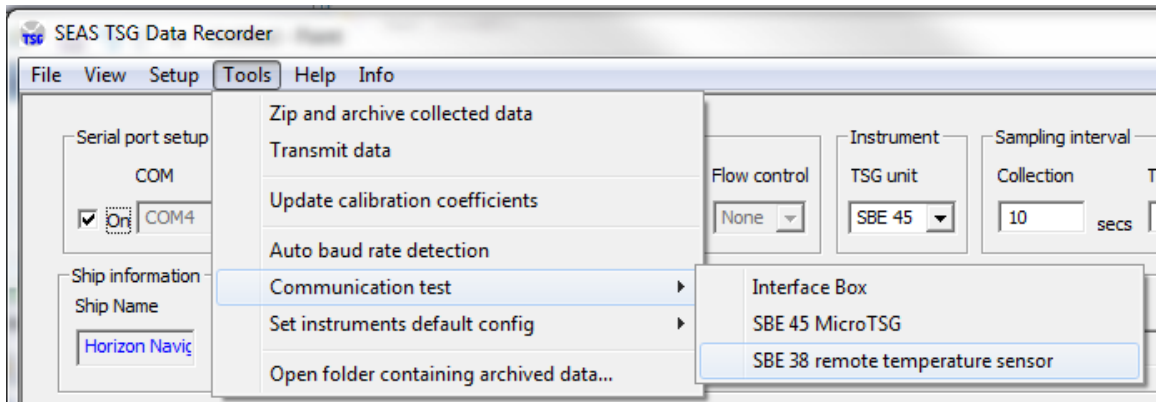
Tools > Communication test > SBE 45 MicroTSG: Use this command to test if the application is able to communicate with [SBE 45 MicroTSG](#) through [Interface Box](#), and displays its configuration.



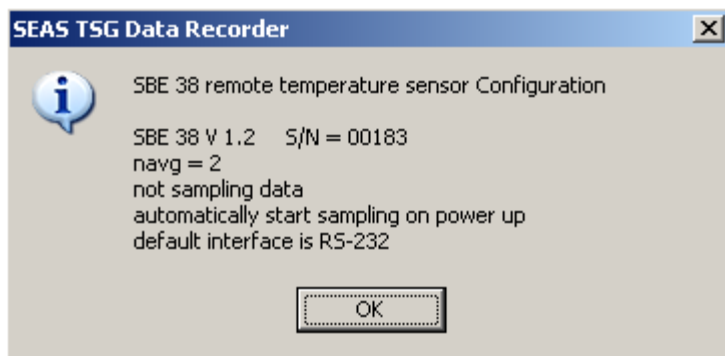
If the communication is established a screen with the current [SBE 45 MicroTSG](#) configuration will appear.



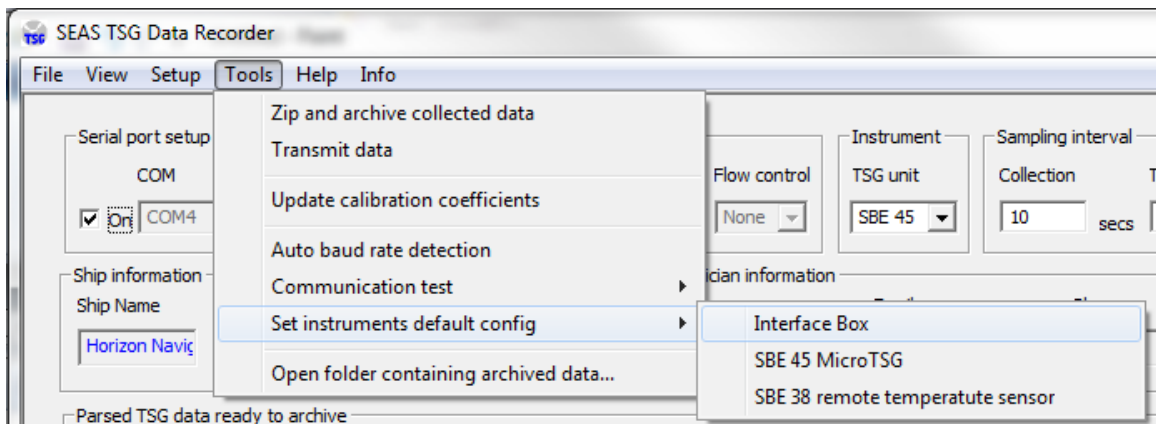
Tools > Communication test > SBE 38 remote temperature sensor: Use this command to test if the application is able to communicate with [SBE 38 remote temperature sensor](#) through [Interface Box](#), and displays the configuration.



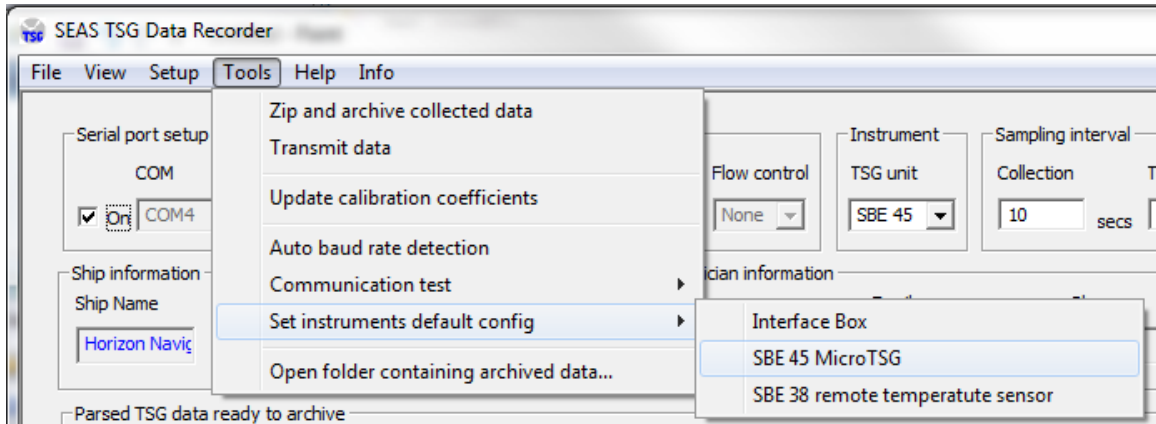
If the communication is established a screen with the current [SBE 38 remote temperature sensor](#) configuration will appear.



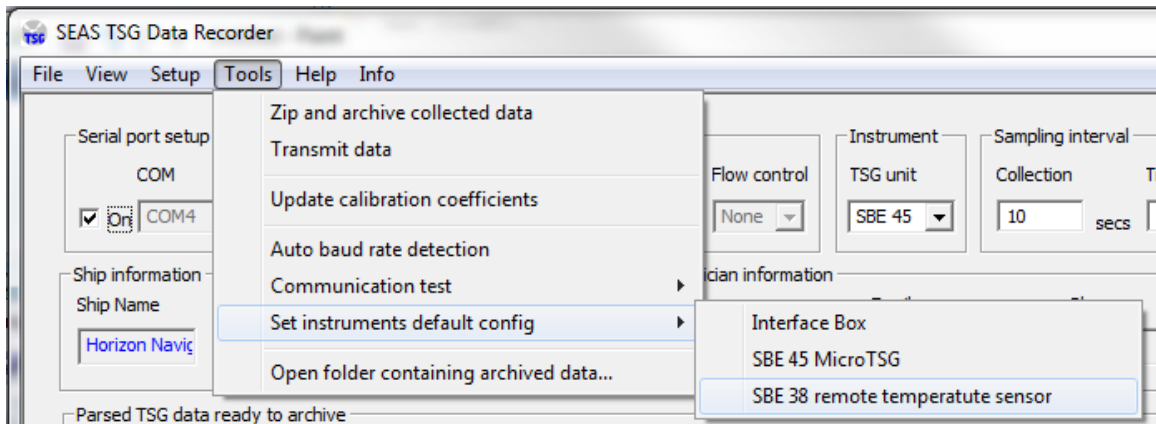
Tools > Set instruments default config > Interface Box: Use this command to read from .INI file the [Interface Box](#)'s default configuration setup, and sets them appropriately.



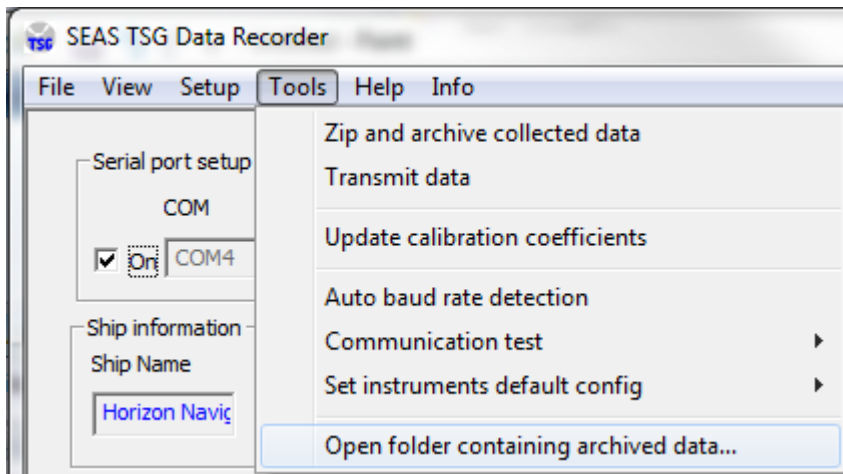
Tools > Set instruments default config > SBE 45 MicroTSG: Use this command to read from .INI file the [SBE 45 MicroTSG](#) 's default setup, and sets them appropriately.



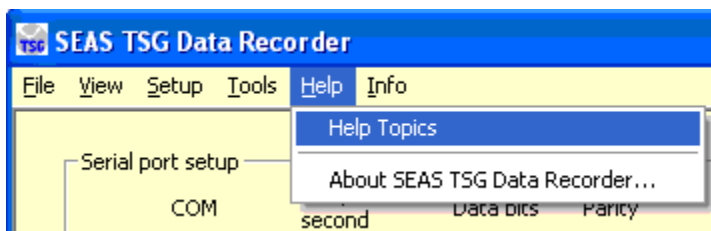
Tools > Set instruments default config > SBE 38 remote temperature sensor: Use this command to read from .INI file the [SBE 38 remote temperature sensor](#) 's default setup, and sets them appropriately.



Tools > Open folder containing archived data: Use this command to display in Windows explorer the folder where the data are archived.



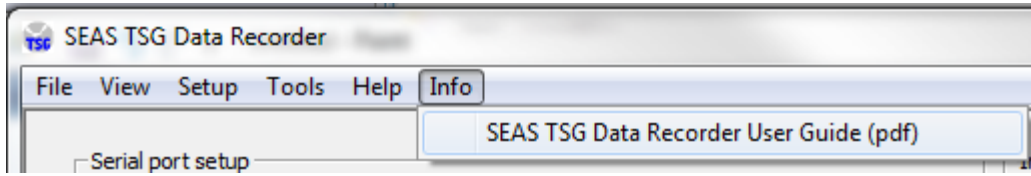
Help > Help topics: Use this command to display the opening screen of help. From the opening screen, you can jump to step-by-step instructions for using SEAS TSG Data Recorder and various types of reference information.



Help > About SEAS TSG Data Recorder: Use this command to display the copyright notice and version number of your copy of SEAS TSG Data Recorder.



Info: This menu provides you links to documents that can help you work with SEAS TSG Data Recorder.



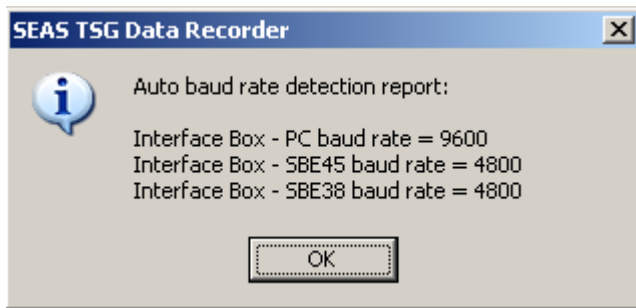
Auto baud rate detection

To achieve effective communication between the instruments, the baud rate for communication between the [Interface Box](#) and the computer must be greater than the baud rate between the [Interface Box](#) and the [SBE 45 MicroTSG](#), and the baud rate between the [Interface Box](#) and the [SBE 38 remote temperature sensor](#). The **Auto baud rate detection** feature allows changing the baud rate in the [SBE 45 MicroTSG](#) and/or [SBE 38 remote temperature sensor](#) for compatibility with the Interface Box.

By default AOML set follow configuration:

Communicated instruments	Baud rate
Interface Box - Computer	9600
Interface Box – SBE 45	4800
Interface Box – SBE 38	4800
Interface Box – NMEA navigation device	4800

This automatic detection is useful for establishing communication between the instruments. Once the communication between the instruments has been established a report will be generated.



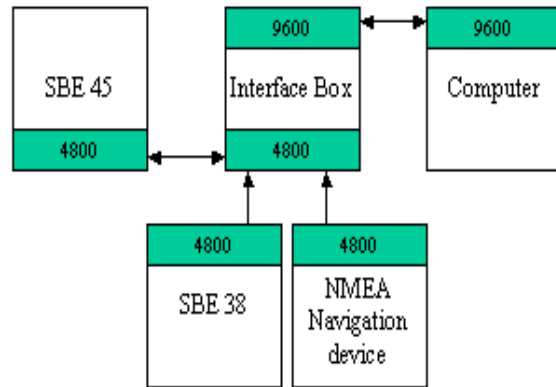
Detection technique

To determine the baud rate of the instruments a command will be sent, and the response will be examined. If it doesn't match with the expected response then the baud rate will be changed until we get an expected answer.

Communicated instruments	Baud rate range
Interface Box - Computer	4800, 9600 or 19200
Interface Box – SBE 45	1200, 2400, 4800 or 9600
Interface Box – SBE 38	1200, 2400, 4800 or 9600
Interface Box – NMEA navigation device	4800 or 9600

Exchange algorithm

The exchange algorithm is to change the baud rate while the instrument is communicating through the [Interface Box](#). The procedure is assuming that we want the computer to communicate with the [Interface Box](#) at 9600 baud, and the other instruments with the [Interface Box](#) at 4800 baud.



1. Establish communication with the [Interface Box](#) using the detection technique.
2. With the [Interface Box](#) in Normal mode, send **PCBaud=19200** to change the baud rate between the [Interface Box](#) and the computer to 19200.
3. Set the computer serial port's baud rate to 19200.
4. Modify the [SBE 45 MicroTSG](#) baud rate:
 - A. Send **45Baud=9600** to set the baud rate in the [Interface Box](#) for communication with the [SBE 45 MicroTSG](#) to 9600.
 - B. Send **Connect45** to communicate with the [SBE 45 MicroTSG](#).
 - C. Stop sampling by sending **Stop** (it may need to send the command several times).
 - D. Send **Baud=4800** to set the [SBE 45 MicroTSG](#) baud rate to 4800.
 - E. Send **@** to return to the [Interface Box](#).
 - F. Send **45Baud=4800** to set the baud rate in the [Interface Box](#) for communication with the [SBE 45 MicroTSG](#) to 4800.
5. Modify the [SBE 38 remote temperature sensor](#) baud rate:
 - A. Send **38Baud=9600** to set the baud rate in the [Interface Box](#) for communication with the [SBE 38 remote temperature sensor](#) to 9600.
 - B. Send **Connect38** to communicate with the [SBE 38 remote temperature sensor](#).
 - C. Stop sampling by sending **Stop** (it may need to send the command several times).

- D. Send **Baud=4800** to set the [SBE 38 remote temperature sensor](#) baud rate to 4800.
 - E. Send **@** to return to the [Interface Box](#).
 - F. Send **38Baud=4800** to set the baud rate in the [Interface Box](#) for communication with the [SBE 38 remote temperature sensor](#) to 4800.
6. Send **PCBaud=9600** to change the baud rate between the [Interface Box](#) and the computer to 9600.
 7. Set the computer serial port's baud rate to 9600. The [Interface Box](#) is now communicating with the computer at 9600 baud.

Setting instruments default setup

The data output format depends on the instruments' configuration. The command's values will be loaded from the .INI file.

Commands to setup the [Interface Box](#)'s parameters.

Command	Value	Description
Format	0	Standard format.
PCBaud	9600	Baud rate for communication between Interface Box and computer.
45Baud	4800	Baud rate for communication between Interface Box and SBE 45.
38Baud	4800	Baud rate for communication between Interface Box and SBE 38.
NMEABaud	4800	Baud rate for communication between Interface Box and NMEA unit.

Commands to setup the [SBE 45 MicroTSG](#)'s parameters.

Command	Value	Description
Interval	1	Interval (seconds) between samples.
OutputCond	Y	Output conductivity (S/m) with data.
OutputSal	Y	Output salinity (psu) with data.
OutptSV	Y	Output sound velocity (m/sec) with data.
SVAlgorithm	C	Calculate sound velocity as Chen and Millero.
AutoRun	Y	Start sampling automatically when power on.
SingleSample	N	Sample at rate specified by Interval = until power removed.
AutoOff	N	Do not automatically go to sleep.
NCycles	4	A/D cycles to average per sample.
Baud	4800	Baud rate communication between SBE 45 and Interface Box.
OutputFormat	0 or 1	Other format is not compatible with the Interface Box.

Commands to setup the [SBE 38 remote temperature sensor](#)'s parameter.

Command	Value	Description
Interface	232	Communication using RS-232.
Navg	2	Number of A/D cycles to average for each sample.
AutoRun	Y	Start sampling automatically when power on.
Format	C	°C, ITS-90.
Digits	4	Number of digits after decimal point.
Baud	4800	Baud rate communication between SBE 38 and Interface Box.

Archiving data

The [NOAA](#) National Oceanographic Data Center ([NODC](#)) preserves and disseminates ocean data, including TSG data, in their Ocean Archive System ([OAS](#)); it allows the oceanographic community to use these data for a long time.

The generated TSG data files contain the meta-data at the top, and the TSG data bellow.

The **\$AOML:001** section corresponds to the meta-data.

Designator	Parameter	Unit
WMOID	Ship Call Sign	
SHIPN	Ship name	
IMONO	Ship IMO number	
TEC	Technician name	
TECM	Technician email address	
TECP	Technician phone	
TECA	Alternate technician name	
TECAM	Alternate technician email address	
TECAP	Alternate technician phone	
TSGMOD	TSG unit model	
TSGSN	TSG unit serial number	
IDP	TSG unit intake depth	meter
ILEN	Length of pipe from water to TSG unit	meter
DCAL	TSG unit calibration date	
COTG	TSG unit temperature coefficient A0	
COTH	TSG unit temperature coefficient A1	
COTI	TSG unit temperature coefficient A2	
COTJ	TSG unit temperature coefficient A3	
COCG	TSG unit conductivity coefficient G	
COCH	TSG unit conductivity coefficient H	
COCI	TSG unit conductivity coefficient I	
COCJ	TSG unit conductivity coefficient J	
COCPR	TSG unit conductivity coefficient Cpcor	
COCTR	TSG unit conductivity coefficient Ctcor	
COCWB	TSG unit conductivity coefficient Wbotc	
EXTMOD	Remote sensor model	
EXTSN	Remote sensor serial number	
EXTDCAL	Remote sensor calibration date	
EXTTD	Remote sensor intake depth	meter
EXTTL	Remote sensor length of pipe	meter
COA0	Remote sensor temperature coefficient A0	
COA1	Remote sensor temperature coefficient A1	
COA2	Remote sensor temperature coefficient A2	

COA3	Remote sensor temperature coefficient A3	
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The \$AOML:002 section corresponds to the TSG data.

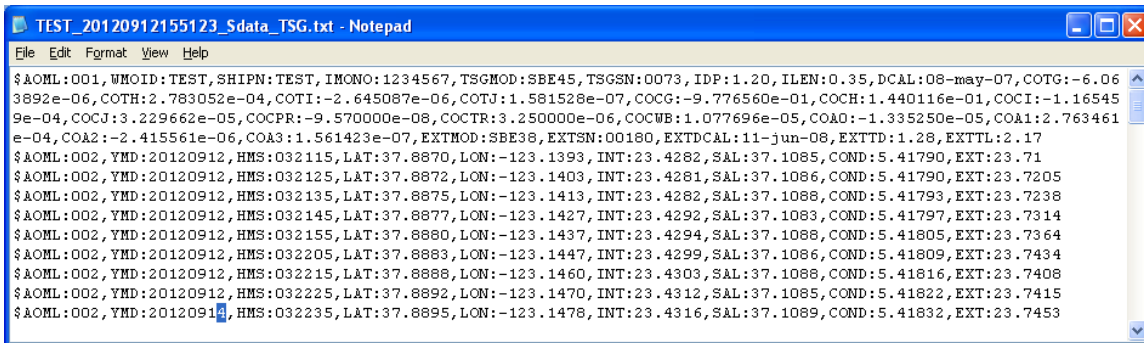
Designator	Parameter	Unit
YMD	PC date: Year Month Day	UTC
HMS	PC time: Hour Minute Second	UTC
LAT	GPS Latitude	degree (+N, -S)
LON	GPS Longitude	degree (+E, -W)
INT	TSG unit temperature*	°C, ITS-90
SAL	TSG unit salinity*	PSU
COND	TSG unit conductivity*	siemens/meter
EXT	Remote sensor temperature	°C, ITS-90

* All samples are instantaneous. No averaging.

TSG data is time and position stamped with time and position data from satellites and this is the data that is archived. This format is compatible with data coming from other TSG server on the [NOAA](#) ships, which do not use our application for TSG acquisition data.

Data collection

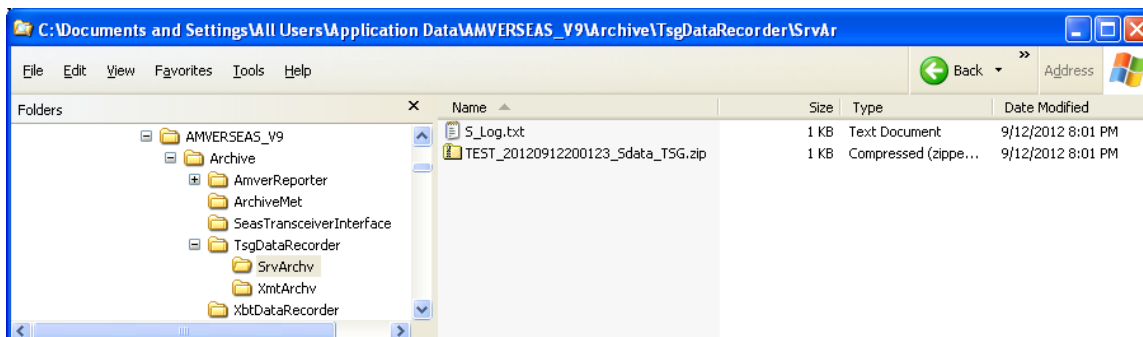
SEAS TSG Data Recorder application archives the collected TSG data in a text file in the ... \Archive\TsgDataRecorder\SrvArchv directory. The data are recorded at the speed of the **Collection-sampling interval** field.



The file name TEST_20120912155123_Sdata_TSG.txt stands for:

- TEST = Ship call sign
- 20120912155123 = generation time, format: YYYYMMDDHHMMSS
- Sdata = fixed text to distinguish collected data
- TSG = fixed text

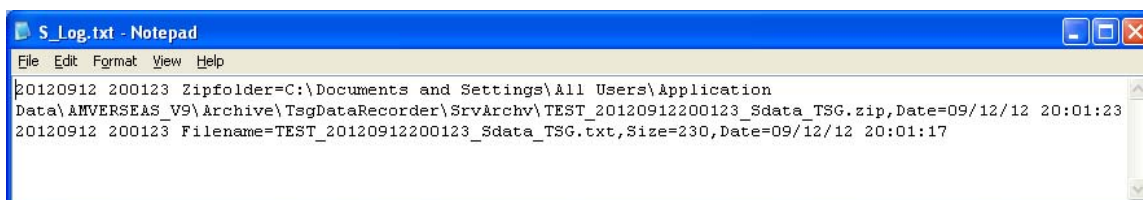
The generated file will be zipped at 12:00 am every day, when the user selects **Main Menu > Tools > Zip and archive collected data** option or when the application exits.



The zipped files are taken off the ship by a technician every few months or as scheduled. Its name has typically following format: CallSign_YYYYMMDDHHMMSS_Sdata_TSG.zip where:

CallSign	= Ship call sign
YYYYMMDDHHMMSS	= generation time
Sdata	= fixed text to distinguish collected data
TSG	= fixed text

The **S_Log.txt** file into the same directory contains information about the zipped archive files. It is used to keep track of when zipped files are created and what was inside of it.



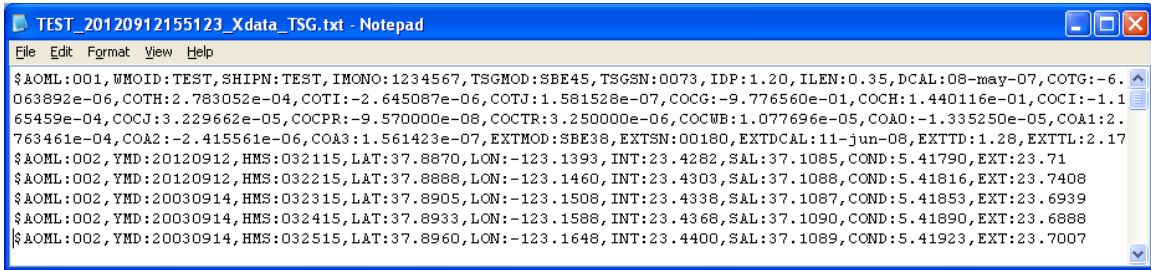
Where

Zipfolder	= Zipfolder name, path included
Date	= Date the zipfolder was created
Filename	= The name of archived file into zipfolder
Size	= The length of the archived file, in bytes
Date	= The last time the archived file was changed

Data transmission

The ready collected data to be transmitted will be recorded into ...\\Archive\\TsgDataRecorder\\XmtArchv directory at the speed of the **Transmission-sampling interval** field.

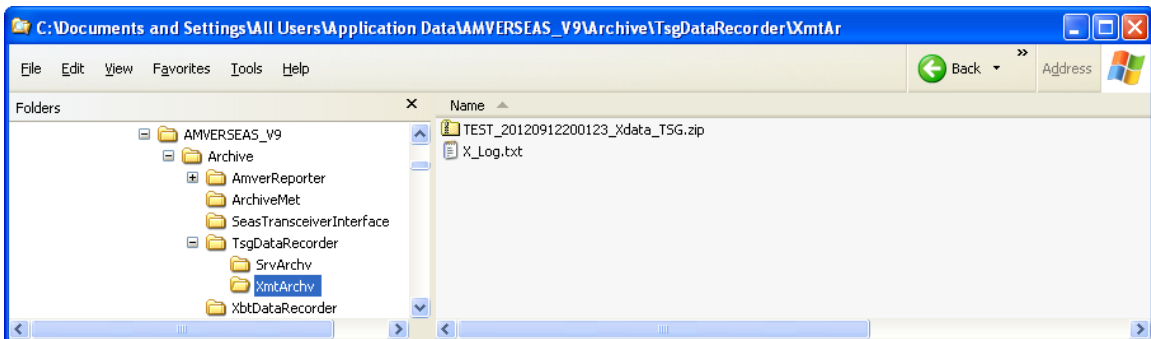
These files have the same format as the collected data files; the data could be equal to the collected data or a sampling subset. For example the sampling of the data collected maybe is 10 seconds, and the sampling of the data ready to transmit maybe is 60 seconds. This feature allows reduce the transmission costs by reducing the size of the files to transmit.



The file name TEST _20120912155123_Xdata_TSG .txt stands for:

- TEST = Ship call sign
- 20120912155123 = generation time, format: YYYYMMDDHHMMSS
- Xdata = fixed text to distinguish transmitted data
- TSG = fixed text

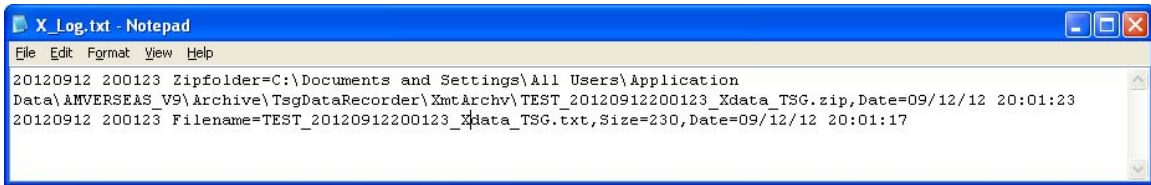
The generated file to transmit TSG data will be zipped at the user selected time to zip and transmit data in **Transmission interval** fields, when the user selects **Main Menu > Tools > Transmit data** option or when the application exits.



Its name has typically following format:
CallSign_YYMMDDHHMMSS_Xdata_TSG.zip where:

CallSign = Ship call sign
 YYYYMMDDHHMMSS = generation time
 Xdata = fixed text to distinguish transmitted data
 TSG = fixed text

The **X_Log.txt** file into the same directory contains information about the zipped archive files. It is used to keep track of when zipped files are created and what was inside of it.



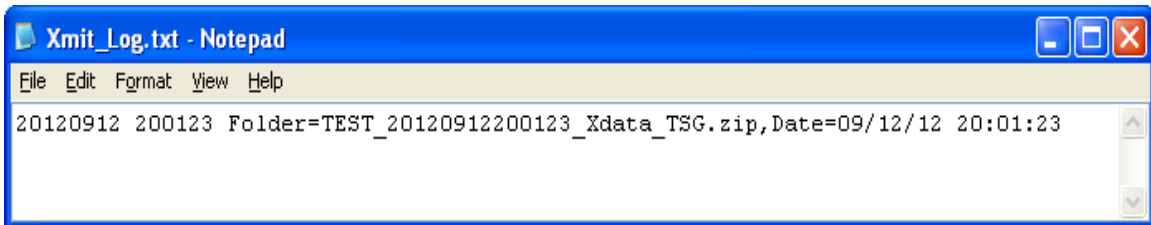
Where
 Zipfolder = Zipfolder name, path included
 Date = date the zipfolder was created

Filename = The name of archived file into zipfolder
 Size = The length of the archived file, in bytes
 Date = The last time the archived file was changed

Transmission process

The transmission process in SEAS TSG Data Recorder application is a pseudo transmission process. It consists to copy the CallSign_YYYYMMDDHHMMSS_Xdata_TSG.zip file from ...**Archive\TsgDataRecorder\XmtArchv** directory to the Iridium's queue for the real transmission via satellite using the Iridium Mailer Service. When the remission is completed, it is logged in the transmission log file.

The transmission log file **Xmit_Log.txt** contains information about when the file was sent to Iridium Mailer Service's queue. This is written after the data is sent to Iridium's queue, and is a safeguard to insure status of files sent to this directory.



Where

Folder = File sent to Iridium Mailer Service's queue
Date = Remission date

Note: When a file has been successfully transmitted, the Iridium Mailer Service deletes the file from the queue and proceeds to transmit the next file if any.

.INI file

TsgDataRecorder.ini is a plain-text file that contains configuration information. This file is used by SEAS TSG Data Recorder to save information about the application setup, and preferences. "INI" stands for *initialization* (**.INI File, More abstraction using text between programs, not within programs.doc**). The file has to be in the same directory where the application runs.