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USER'S MANUAL

STARVIEW

P/N 189-614262-00X

Supersedes Publication No. 1215-GEN-0101
Dated June 16, 1998

CMC Electronics Inc.
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Revision ..... A ..... July 7, 2000
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SERVICE BULLETIN LIST

SERVICE BULLETIN NO.	SUBJECT	MANUAL REVISION NUMBER	MANUAL REVISION DATE

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ACRONYMS AND ABBREVIATIONS

BCD	Binary Coded Decimal
BIT	Built In Test
BNR	Binary Numerical Representation
C/A Code	Coarse Acquisition Code
C/N_o	Carrier to Noise Density Ratio
CE P	Circular Error Probability
CMC	CMC Electronics Inc.
CRC	Cyclic Redundancy Check
CW	Continuous Wave
dBm	decibel relative to 1 milliWatt
DRMS	Distance Root Mean Square
ECEF	Earth Centred Earth Fixed
EEPROM	Electrically Erasable Programmable Read Only Memory
EMC	Electromagnetic Compatibility
ESDS	Electrostatic Discharge Sensitive
FEPROM	Flash Erasable Programmable Read only Memory
FMEA	Failure Mode Effects Analysis
FOM	Figure of Merit
GIC	GPS Integrity Channel
HDOP	Horizontal Dilution of Precision
HFOM	Horizontal Figure of Merit
HOST	Customer system receiving the RT·STAR
ICD	Interface Control Document
ISO	International Standards Organization
LSB	Least Significant Bit
MHz	MegaHertz
MOPS	Minimum Operational Performance Standard
MSB	Most Significant Bit
MTBF	Mean Time Between Failures
NAVSTAR	Navigation System with Timing And Ranging
NVM	Non-Volatile Memory
OEM	Original Equipment Manufacturer
PPM	Parts Per Million
PRN	Pseudo Random Number
PVT	Position Velocity Time output data
RAM	Random Access Memory
RF	Radio Frequency
RMS	Root Mean Square
RTCM	Radio Technical Commission for Maritime Services
RTK	Real-Time Kinematic
SV	Space Vehicle
SVID	Space Vehicle Identifier
TDOP	Time Dilution of Precision
Toa	Time of Almanac
TTFF	Time To First Fix
UTC	Universal Time Coordinated
VDOP	Vertical Dilution of Precision

VSWR	Voltage Standing Wave Ratio
Wna	Week number of almanac
WGS-84	World Geodetic System - 1984

SECTION I

INTRODUCTION

FUNCTIONAL DESCRIPTION

This user manual is intended for use by an operator installing, testing or performing maintenance on the following CMC Electronics Inc. (CMC) equipment:

a. ***RT-STAR*** CMC Part Number 220-600944-4XX

b. ***ALLSTAR DGPS Base Station*** CMC Part Number 220-600944-10X

TEST EQUIPMENT REQUIREMENTS

To use ***STARVIEW*** software for test requires hardware and software equipment's. The nomenclature and CMC part number or model for the required equipment are listed below.

a. Personal Computer with a mouse, 3.5" drive and Windows software: IBM or compatible 486 or Pentium version NT 3.51 or later, version Windows 95 or later.

b. ***ALLSTAR DGPS Base Station*** or ***RT-STAR*** Roving Unit.

c. GPS antenna for ***ALLSTAR DGPS Base Station*** or ***RT-STAR***.

d. Transmitting Modem for ***ALLSTAR DGPS Base Station***. (DGPS corrections)

e. Receiving Modem for ***RT-STAR***. (DGPS corrections)

STARVIEW DESCRIPTION

This manual describes the ***STARVIEW*** intended to test most functions of the Global Position System (GPS) and/or Navigation sections of the equipment listed above. Test results may be displayed in real time or stored in a file.

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SECTION II

INSTALLATION AND VERIFICATION

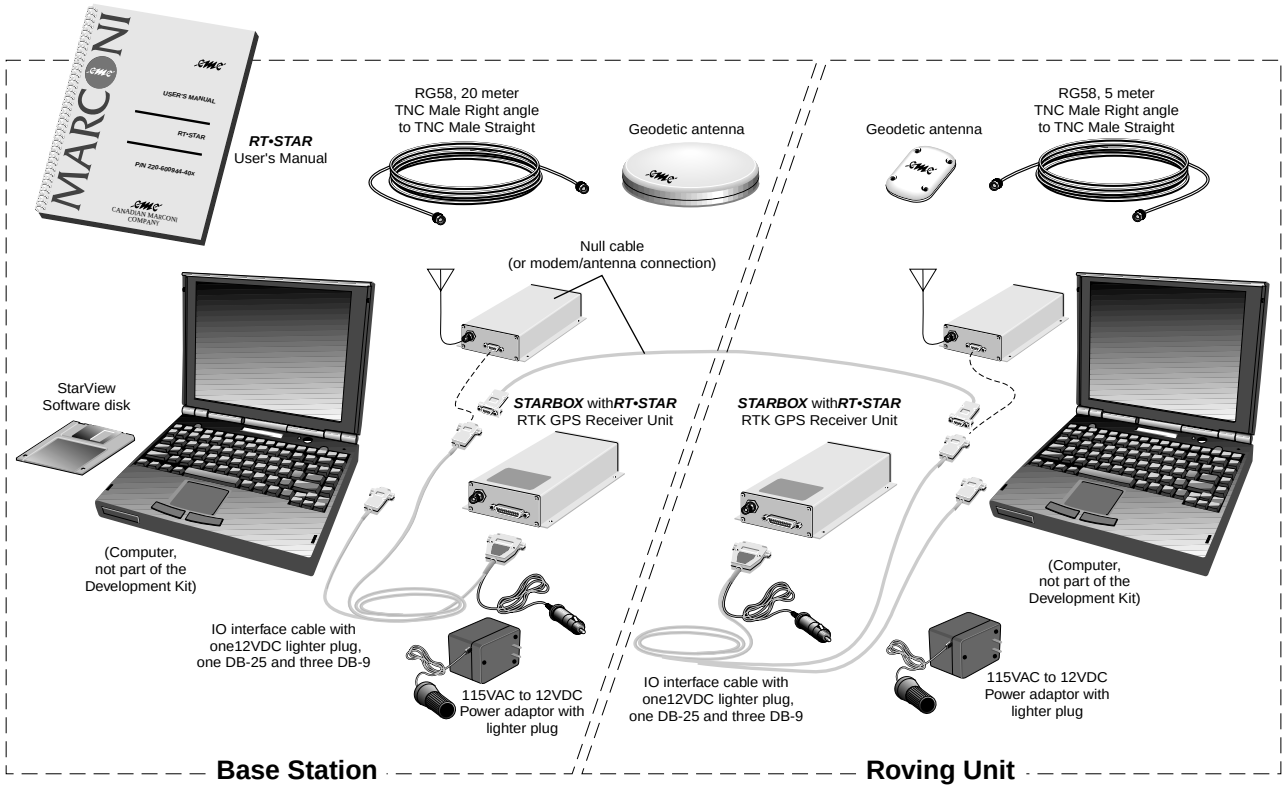
INSTALLING STARVIEW

a. Make sure that the Equipment is connected like it shows in Figure 2-1.

b. Switch the computer ON.

c. Insert the ***STARVIEW*** Diskette into the appropriate disk drive slot.

d. Select the disk drive containing the ***STARVIEW*** Software and double click on file **SETUP.EXE**, then execute instructions step by step.

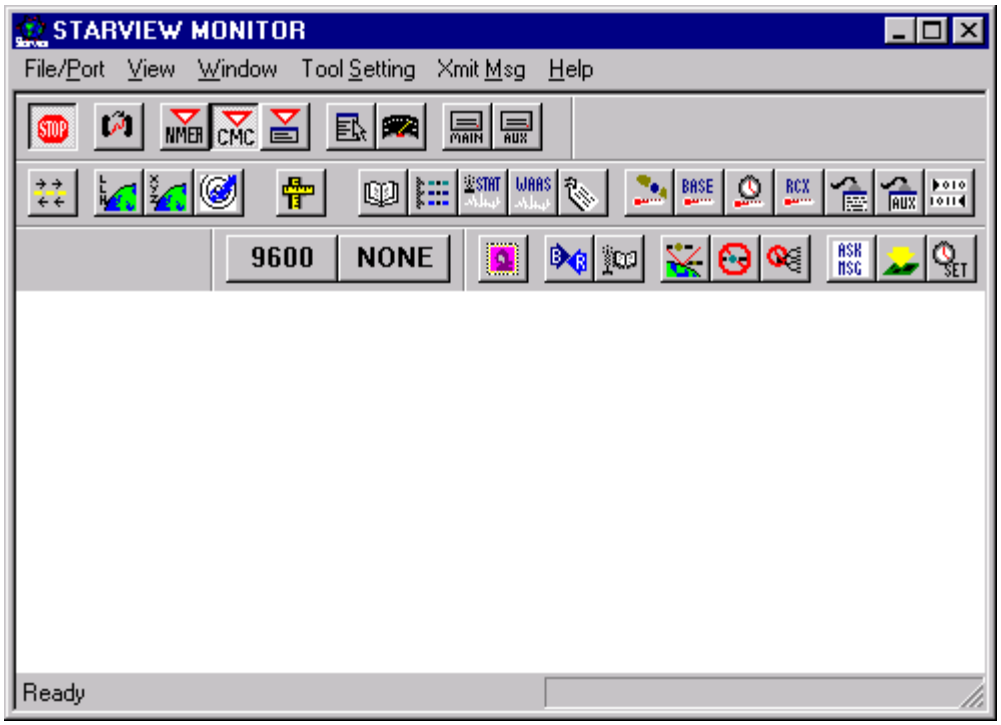


Equipment's interconnection
Figure 2-1

VERIFICATION

Once the ***STARVIEW*** software is installed, double click the ***STARVIEW*** icon, 

, and the ***STARVIEW MONITOR*** Window will be displayed. ***STARVIEW*** is now ready to be used.

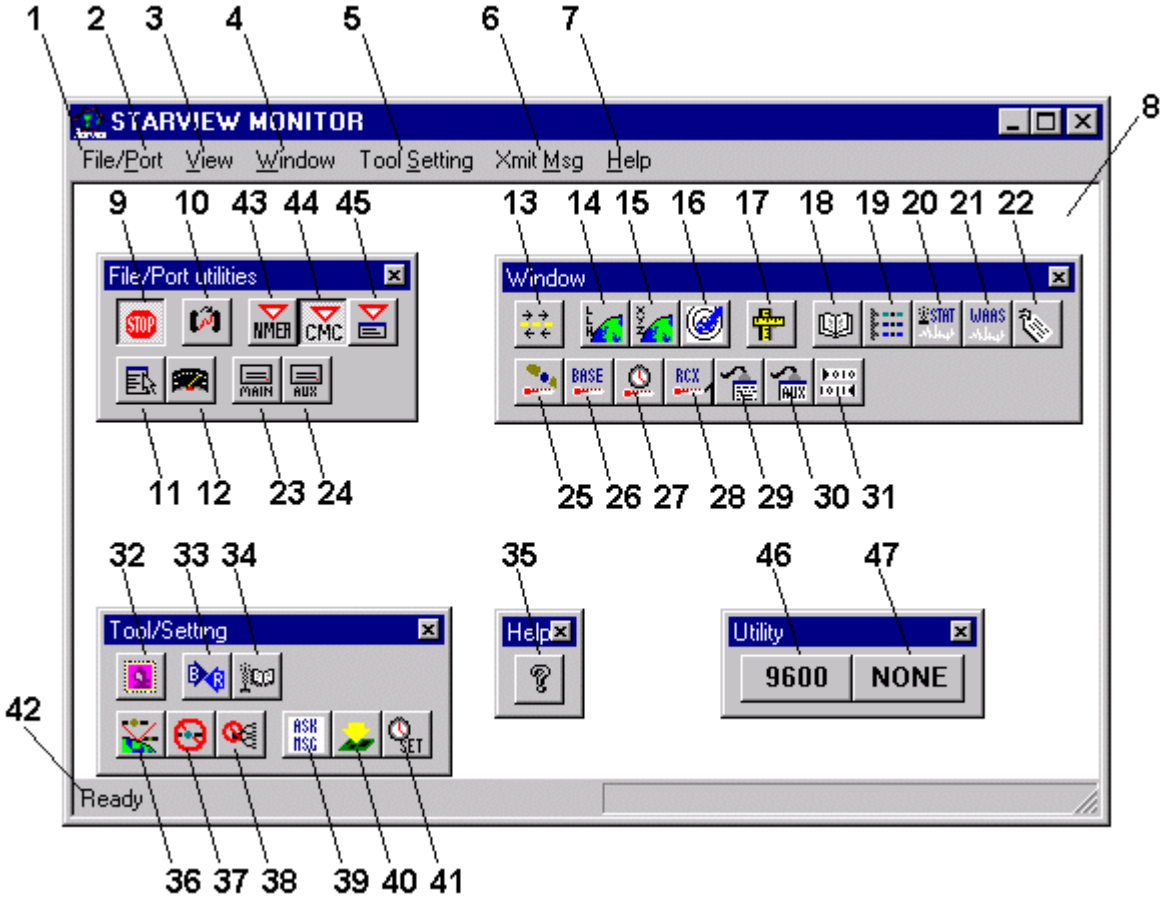


SECTION III

FUNCTIONAL DESCRIPTION

STARTING STARVIEW

Double clicking the ***STARVIEW*** icon,  . The ***STARVIEW MONITOR*** window will be displayed.



NO.	NAME	FUNCTION
1	Menu Bar	displays the ***STARVIEW*** menu.
2	File/Port Menu	displays the File/Port configuration menu
3	View Menu	displays the View menu.
4	Windows menu	displays the windows Window menu.
5	Xmit Msg menu	displays the Transmit message menu.
6	Tool/Setting menu	displays the Tool/Setting menu
7	Help menu	displays the help menu. (About)
8	Main Window area	All windows are independant (included Main Window)
9	Stop Communication Button	Stop communication with file or port
10	Port Selection Button	displays port selection dialog
11	Open Log File	displays open dialog
12	Set Playback Rate	displays playback rate dialog
13	Received I/O Msg Count Button	displays received I/O messages count window
14	User Navigation Button	displays Navigation solution window in User Coordinates (Latitude, Longitude, Altitude)
15	GPS Navigation Button	displays Navigation solution window in GPS Coordinates (X, Y, Z)
16	User Position Button	displays Navigation position window in User Coordinates (Latitude, Longitude, Altitude)
17	Measurements Button	displays measurements window
18	Ephemeris Button	displays Ephemeris window (ICD-GPS-200 format)
19	Channel Assignment Button	displays channel assignment window
20	DGPS Status Button	displays differential messages count window
21	WAAS Status Button	displays WAAS messages count window
22	Part Numbert Button	displays part number window
23	Log Incomming I/O Msg Button	displays file selection dialog to save incomming I/O messages from main port
24	Log Incomming I/O Msg Button	displays file selection dialog to save incomming I/O messages from auxiliary port
25	Satellites Status Button	displays satellites status message
26	Base Status Button	displays base configuration (position, msg rate, etc.)
27	Timing Information Button	displays timing information data

NO.	NAME	FUNCTION
28	Receiver Status Button	displays receiver status window
29	Main Terminal Button	displays terminal window from the main port
30	Auxiliary Terminal Button	displays terminal window from the auxiliary port
31	Receipt and Transmission Button	displays received and transmitted message window
32	Request All Messages Button	Request I/O messages #ID : 20, 21, 22, 23, 65
33	Set Operationg Mode Button	displays set operating mode dialog
34	Set Differential Message Rate Button	displays set differential message period dialog
35	Help Button	displays About ***STARVIEW*** dialog
36	Set Mask Angle Button	displays set Mask Angle dialog
37	SV Deselection Button	displays select or deselect Svs dialog
38	Channel Deselection Button	displays select or deselect channels dialog
39	Ask Message Button	displays general message request dialog (Input message with msg length = 6 bytes => Data length = 0)
40	Programming Button	not available
41	Timing Parameters Button	displays timing parameters dialog
42	Tool Tips	displays tools tips (help)
43	Switch to NMEA	switches to NMEA menu
44	Switch to CMC	switches to CMC menu
45	Protocol Dialog	displays dialog to switch protocol of the receiver
46	Baud Rate	displays the current baud rate and allows to change it
47	Com Port	displays the current com port and allows to change it

FUNCTIONS

All menus are accessed from the main window menu-bar. The menu-bar is comprised of 6 menu buttons: File/Port, View, Windows, Xmit Msg, Tool/Setting, and Help. Items in a pull down menu which are followed by an arrow will pop up a pull down menu when selected. Most of ***STARVIEW*** functions are represented by a button as shown.

Menu	ToolBar	Button	Desciption (page)	Note
File/Port			3-510	
Serial Port	File/Port		3-10	
Save Data			3-10	
Main Port	File/Port			
Aux Port	File/Port			
Input log file	File/Port			1
Playback Rate	File/Port			
Save Config			3-11	
Restore Factory Config			3-11	
Stop	File/Port		3-11	
Exit			3-11	
View			3-611	
ToolBars ...				
General	General			
Window	Window			
Tool/Setting	Tool/Setting			
File/Port	File/Port			
Utility	Utility			5
Window			3-11	
Base Status	Window		3-12	3 – 5
BIT (Build In Test)			3-13	5
Channel assignment	Window		3-14	5
Display Messages	Window		3-15	
Beacon Rx Status			3-15	5
DGPS Data			3-16	5

Menu	ToolBar	Button	Desciption (page)	Note
DGPS Configuration			3-17	5
DGPS Status	Window		3-18	2 – 5
Ephemeris	Window		3-18	2 – 5
HW/SW Part Number	Window		3-19	3 – 5
Measurements	Window		3-19	2 – 5
Navigation				
LLH Solution	Window		3-20	2 – 5
XYZ Solution	Window		3-21	5
Plot	Window		3-22	5
Received messages	Window		3-23	
Receiver Status	Window		3-24	5
Satellites				
Status			3-25	5
Position			3-26	5
Health			3-27	5
Terminal	Window		3-27	
Terminal (Aux)	Window		3-28	5
Timing Information			3-28	5
WAAS Status	Window		3-29	5
Beacon Signal Status			3-29	6
DOP & Active SVs			3-30	6
Geographic Position			3-30	6
GPS Fix Data			3-30	6
Navigation Status			3-31	6
Radiobeacon Information			3-31	6
Recommended Minimum GPS			3-32	6
Self-Test Results			3-32	6
SVs In View			3-33	6
Track & Speed			3-33	6
Time & Date			3-34	6

Menu	ToolBar	Button	Desciption (page)	Note
To Waypoint			3-34	6
User Position			3-34	6
Tool Setting			3-40	
Almanac Data Transfer			3-40	5
Clear NVM			3-40	
Deselect				
Channel	Tool/Setting		3-41	5
SVs	Tool/Setting		3-41	5
MSL Model Use			3-42	5
Programming Utility	Tool/Setting		3-42	5
Protocol			3-43	
Restart System			3-43	5
Set Date/Time + Force 1shot 1PPS			3-44	5
Set Datum			3-44	5
Set Default Msg list			3-45	5
Set DGPS Config			3-46	5
Set Differential Msg Rate	Tool/Setting		3-47	5
Set Mask Angle	Tool/Setting		3-47	5
Set Operating Mode	Tool/Setting		3-48	5
Set Timing Parameters	Tool/Setting		3-49	5
Time Alignment				
Enable			3-49	5
Disable			3-50	5
Track SV Request			3-50	5
Define Waypoint			3-51	6
Select Waypoint			3-51	6
Initialization Data			3-52	6
Radiobeacon Command			3-53	6
Set Receiver Parameter			3-54	6
Xmit Msg			3-35	
Base Status			3-35	5
Channel Assignment			3-35	5
DGPS Status			3-35	5
Ephemeris			3-35	5
HW/SW Part Number			3-35	

Menu	ToolBar	Button	Desciption (page)	Note
Initlink			3-36	5
Measurement Block			3-36	5
Nav Solution				
LLH			3-36	5
XYZ			3-36	5
Receiver Status			3-37	
Timing Information			3-37	5
WAAS Status			3-37	5
General Message Request	Tool/Setting		3-37	4 – 5
Request All (ID20, 21, 22, 23, 65)	Tool/Setting			5
DOP & Active SVs			3-37	6
Geographic Position			3-38	6
GPS Fix Data			3-38	6
Navigation Status			3-38	6
Receiver Status			3-38	6
Recommended Minimum GPS			3-38	6
Self-Test Result			3-38	6
SVs in View			3-39	6
Track & Speed			3-39	6
Time & Date			3-39	6
To Waypoint			3-39	6
User Position			3-39	6
Help			3-55	
About StarView	Help		3-1756	

Note:
1- Not implemented in File/Port menu
12- Press right mouse button to request message in continuous mode
23- Press right mouse button to request message in one shot mode
34- Not implemented in Tool/Setting menu
5- Exclusive to CMC menu
6- Excusive to NMEA menu

FILE/PORT

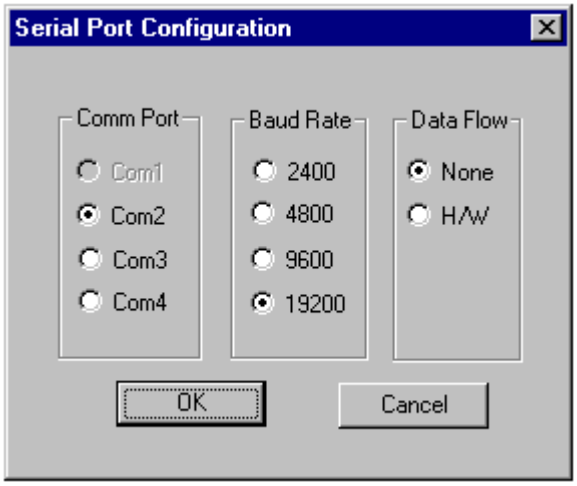
File/Port menu allows to select the communication port of the PC, location file for incomming data, configuration saving, stop communication between the PC and the receiver, stop logging data and Exit application.

SELECT PORT

Select a port to establish communication between the receiver and ***STARVIEW***. I/O messages are transmitted through this port. The dialog window shows the available ports and baud rates.

Note: Data Flow has no effect in your application.

Example: Here Port 1 is used by another application, port2, 3 and 4 are still available, Assuming that Port 2 is chosen with a baud rate of 19200.



SAVE INCOMING DATA

This option allows to log messages currently transmitted by the receiver into a file. All messages received will be recorded in the log file. Make sure the messages are selected before activating logging mode. Note: Ephemeris (msg ID 22) are requested by default

SAVE CONFIG

Windows positions can be saved in a configuration file. ***STARVIEW*** keeps its config in **STARVIEW.CFG**. This file is created if it does not already exist, for example when the first time the application is launched. Toolbars setting are saved in **STARVIEW.INI** file. (This file is created and managed by Windows)

RESTORE FACTORY CONFIG

Sets windows position and size to default configuration.

STOP

This option stops communication between the serial Port of the PC and the receiver. The file logging is also stopped.

EXIT

Exit menu option terminates the application session.

VIEW

This menu option allows to select toolbar menu options. Buttons are grouped by functionality in 4 toolbars: General, Windows, Tool/Setting and Help.

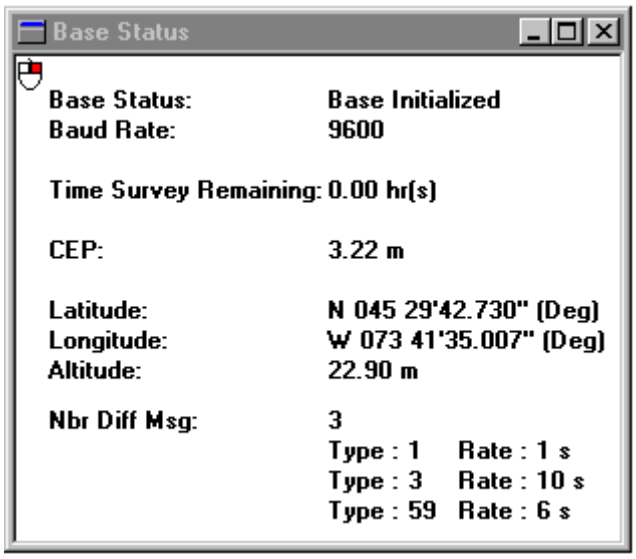
WINDOW

Window menus allow to open one or more windows. Make sure to open the appropriate window(s), corresponding to the test message(s) to be transmitted.

Note: The message to be transmitted must be selected separately,from the Xmit Msg menu or by clicking the right mouse button over the window selected. (Right mouse button is actived when  icon is present in the window) Selected windows are updated after messages transmission.

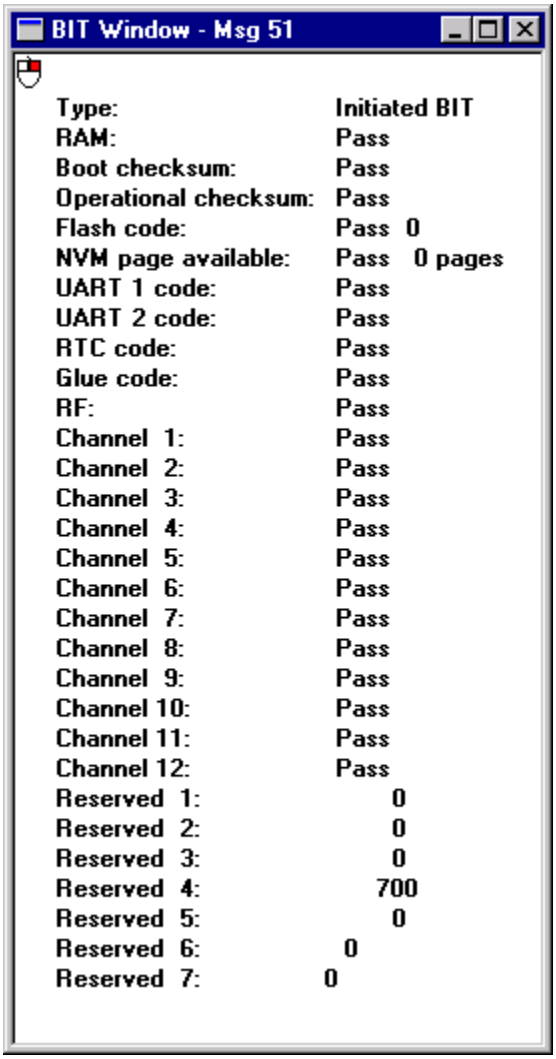
BASE STATUS

Base Status window shows data received by RS-232 output message ID number 47. This message contains board state. (Ex: unit is in Base Station mode, the position is initialized and messages 1, 3 and 59 are encoded.)



BIT (Build In Test)

Executes a test on some components of the receiver and gives the result.



CHANNEL ASSIGNMENT

Channel Assignment window shows data received by RS-232 output message ID numbers 6 and 7.

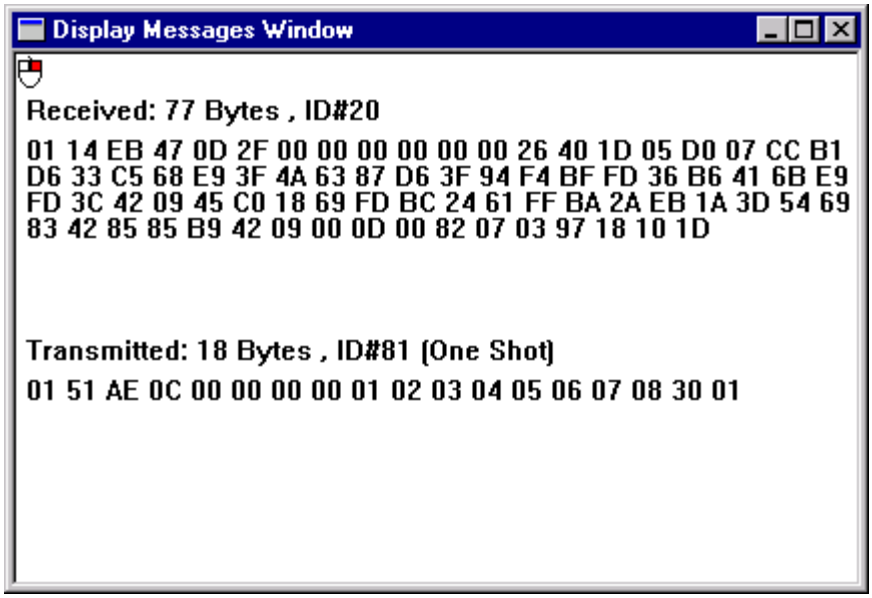
Channel Assignment Window

Current Status

Ch#	Sv#	SNR	Rsrvd	Carr. Freq	Tk Status	Loc Status	Chan Mode	Reserved	Parity
01	26	0.0	0	4965	Not Ready	Location	Auto	0	0
02	02	48.5	0	-975	Measready	Tracking	Auto	0	0
03	07	42.5	0	-1435	Measready	Tracking	Auto	0	0
04	26	0.0	0	4965	Not Ready	Location	Auto	0	0
05	26	0.0	0	4965	Not Ready	Location	Auto	0	0
06	26	0.0	0	4965	Not Ready	Location	Auto	0	0
07	15	50.5	0	375	Measready	Tracking	Auto	0	0
08	27	48.5	0	2715	Measready	Tracking	Auto	0	0
09	31	42.0	0	4215	Measready	Tracking	Auto	0	0
10	26	0.0	0	-12945	Not Ready	Location	Auto	0	0
11	26	0.0	0	-12945	Not Ready	Location	Auto	0	0
12	19	41.5	0	4525	Measready	Tracking	Auto	0	0

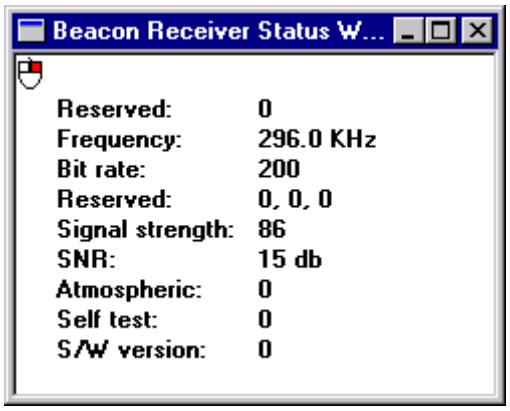
DISPLAY MESSAGES

Displays the input and output messages in hexadecimal format. The size and the number of message are show in decimal format.



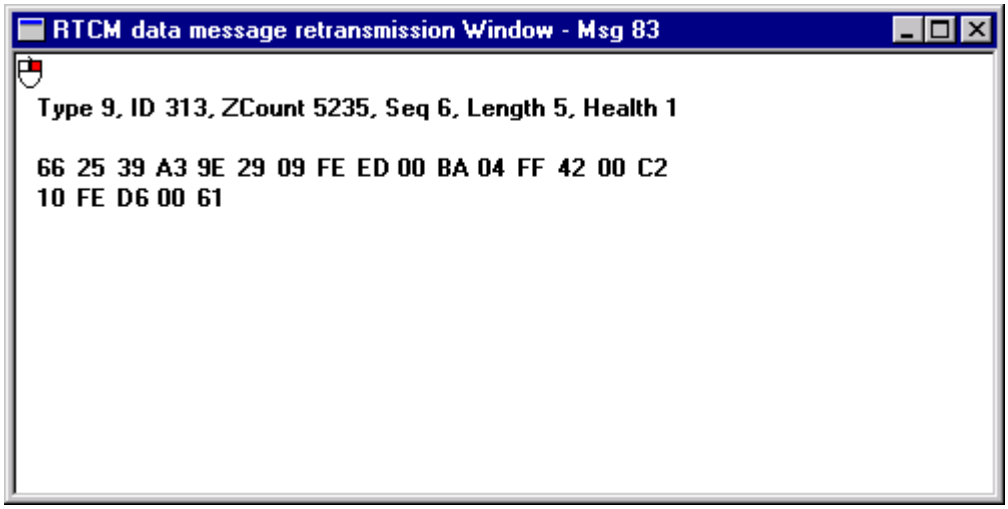
BEACON RX STATUS

Beacon Receiver Status window shows data received by RS-232 output message ID number 85. This message shows the setting of the receiver.



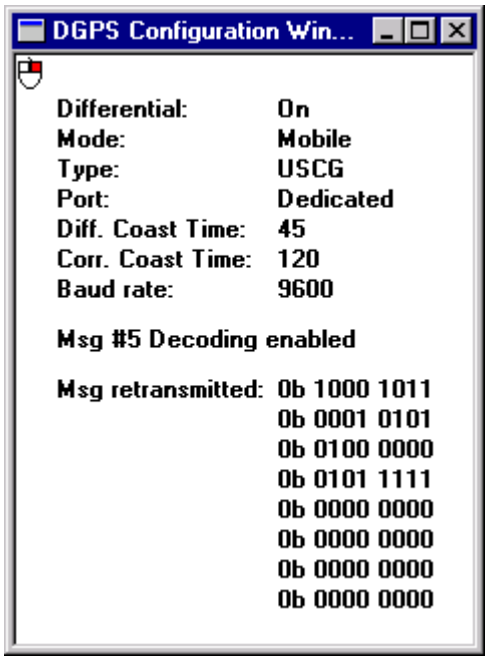
DGPS DATA

DGPS Data window shows data received by RS-232 output message ID number 83. This message shows RTCM data message received by the receiver in hexadecimal format.



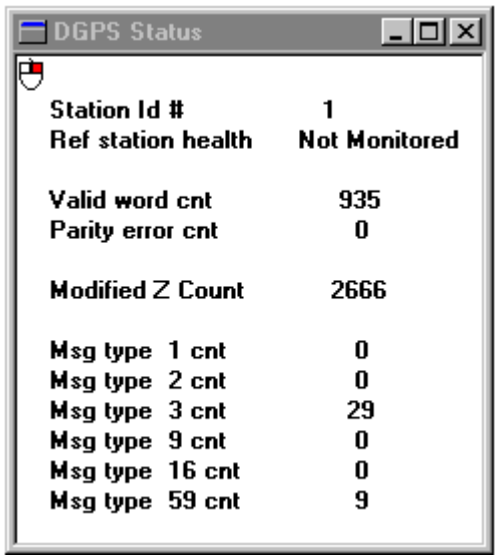
DGPS CONFIGURATION

DGPS Configuration window shows data received by RS-232 output message ID number 43. This message shows DGPS configuration of the receiver.



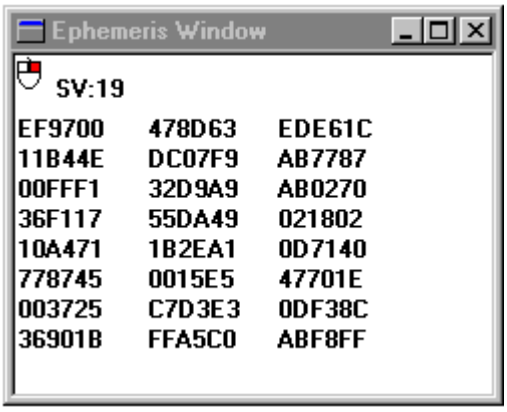
DGPS STATUS

DGPS Status window shows data received by RS-232 output message ID number 48. With ***ALLSTAR Base Station***, this message shows DGPS messages encoded and with a ***RT-STAR***, this message shows DGPS messages received.



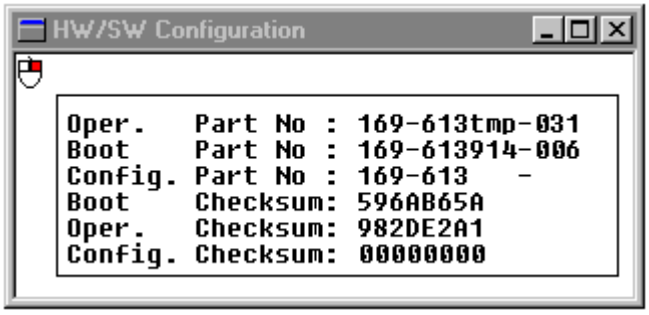
EPHEMERIS

Ephemeris window shows data received by RS-232 output message ID number 22. This data is received in ICD-GPS-200 format.



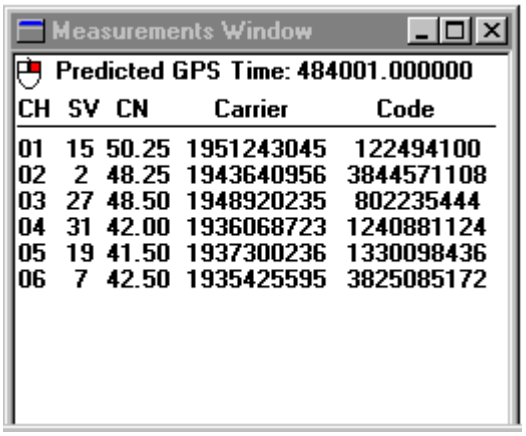
HW/SW PART NUMBER

Part Number window shows data received by RS-232 output message ID number 45.



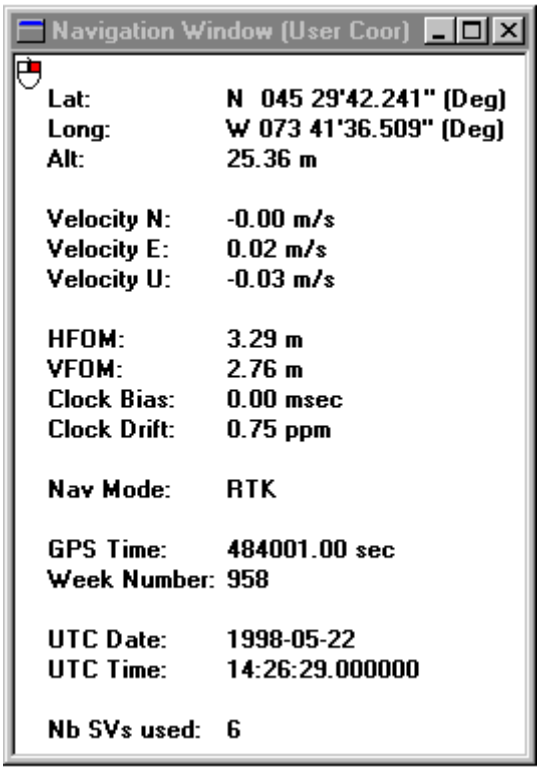
MEASUREMENTS

Measurement Block window shows data received by RS-232 output message ID number 23. (1Hz)



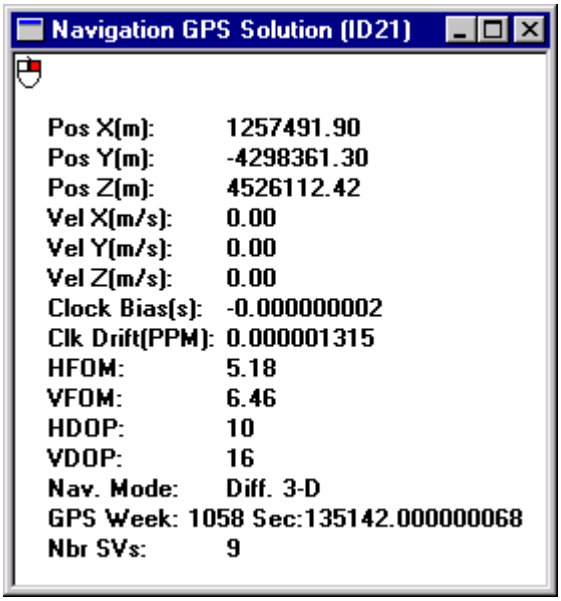
NAVIGATION LLH POSITION

Navigation Data (User Coordinates) window shows data received by RS-232 output message ID number 20.



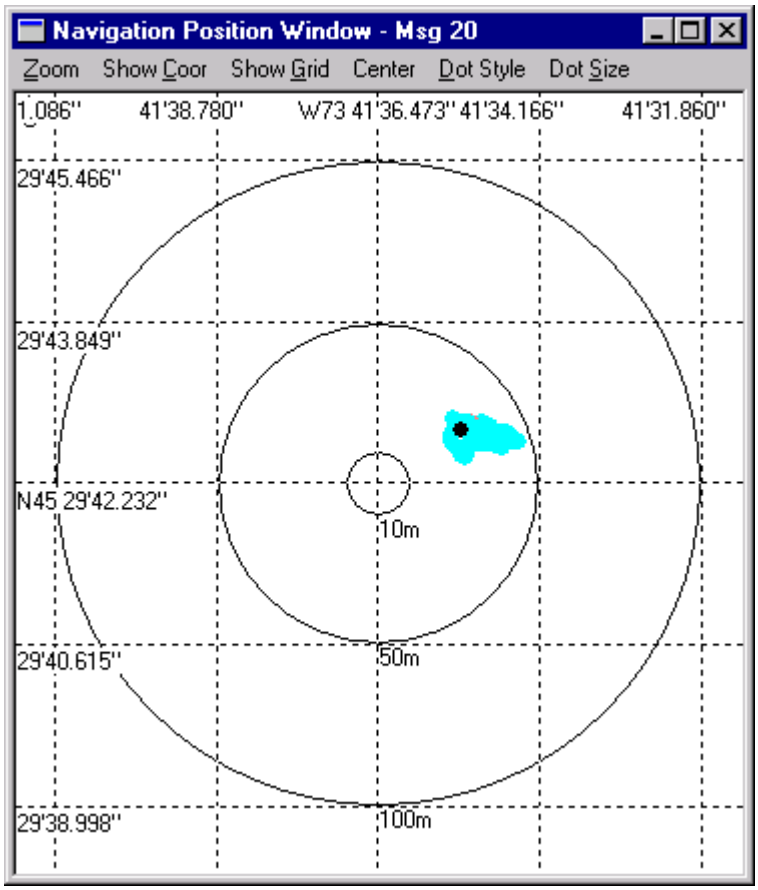
NAVIGATION XYZ POSITION

Navigation Data (GPS Coordinates) window shows data received by RS-232 output message ID number 21.



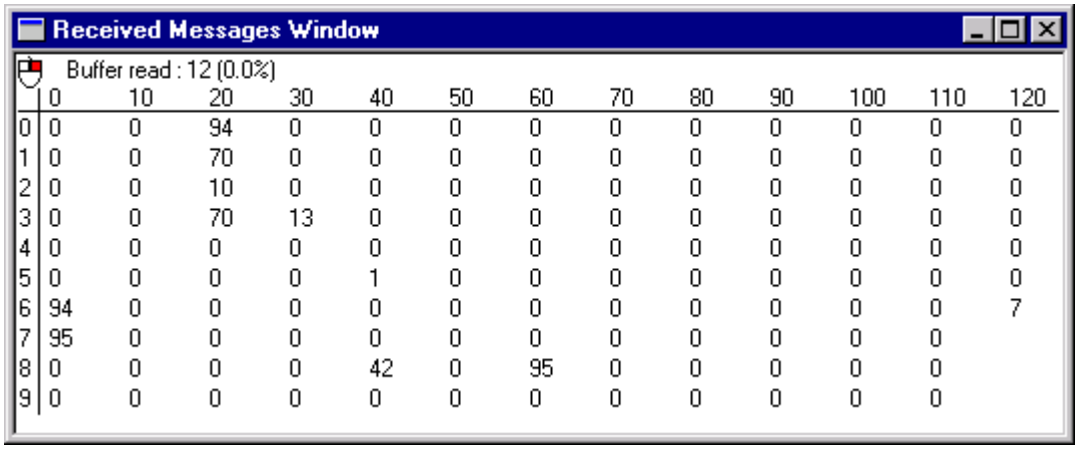
NAVIGATION PLOT

Navigation plot window shows the position computed to compare with the know position or with other computed solution. The window has a zoom of 1 meter to 1000 meters. Some options are available like to view or not the coordinates and the grid. The dot can be adjusted with the two menus Dot Style and Dot Size. This message is received by RS-232 output message ID number 20.

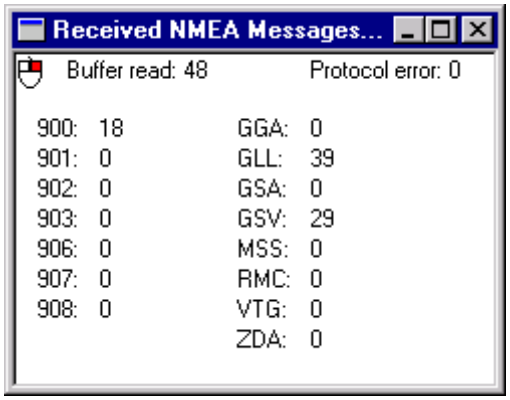


RECEIVED MESSAGES

The Received Message window shows messages received from the receiver. It shows also the size of the file used to save incoming data and protocol errors. First window shows received binary messages and second shows received NMEA messages.

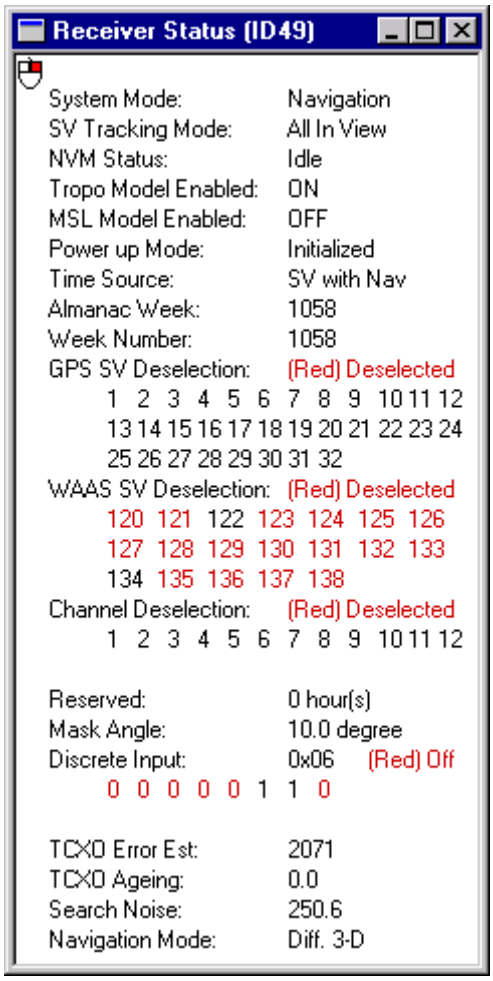


	0	10	20	30	40	50	60	70	80	90	100	110	120
0	0	0	94	0	0	0	0	0	0	0	0	0	0
1	0	0	70	0	0	0	0	0	0	0	0	0	0
2	0	0	10	0	0	0	0	0	0	0	0	0	0
3	0	0	70	13	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	1	0	0	0	0	0	0	0	0
6	94	0	0	0	0	0	0	0	0	0	0	0	7
7	95	0	0	0	0	0	0	0	0	0	0	0	
8	0	0	0	0	42	0	95	0	0	0	0	0	
9	0	0	0	0	0	0	0	0	0	0	0	0	



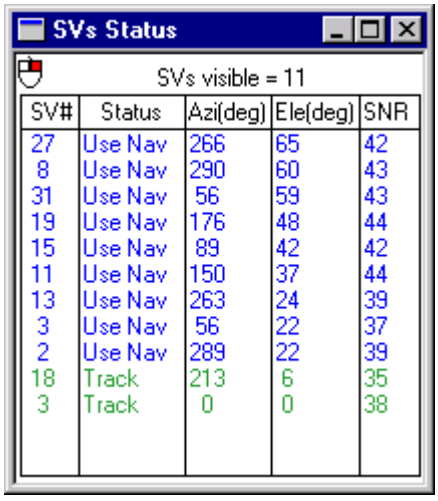
RECEIVER STATUS

The Receiver Status window shows the configuration of the receiver and the data that are used.



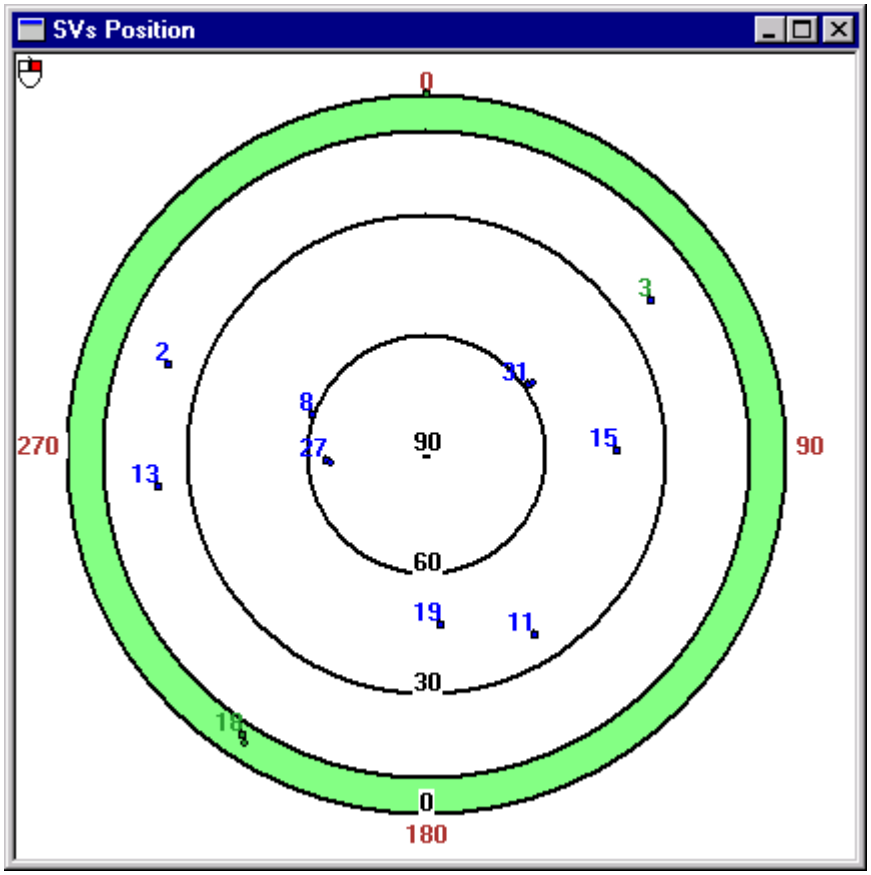
SATELLITES STATUS

Satellites status window shows the status of each satellites used, gives the position of the satellites in the sky in degrees and the signal noise ratio (SNR).



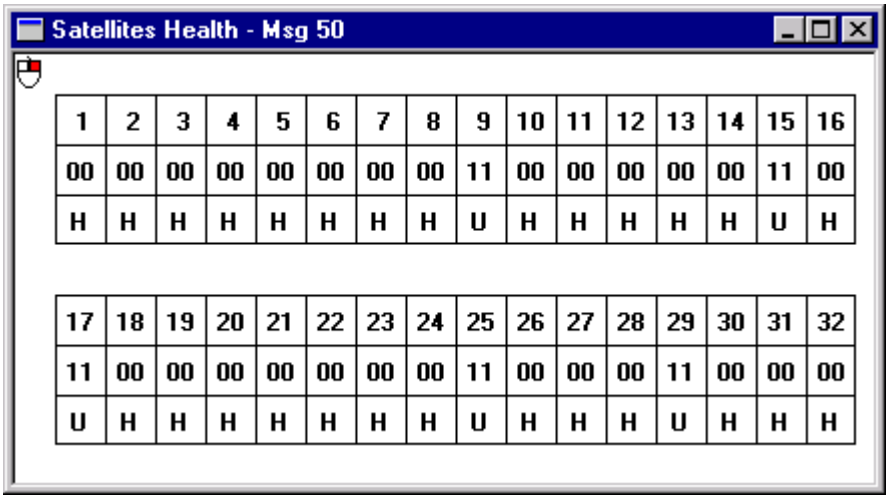
SATELLITES POSITION

Satellites position window shows the position of all satellites in the sky of the user. The position of satellites is given in azimuth and elevation. The window can also display the mask used by the receiver.



SATELLITES HEALTH

Satellites Heath window shows the health of each satellites. A satellites in health is writed H else it's unhealthy (U).

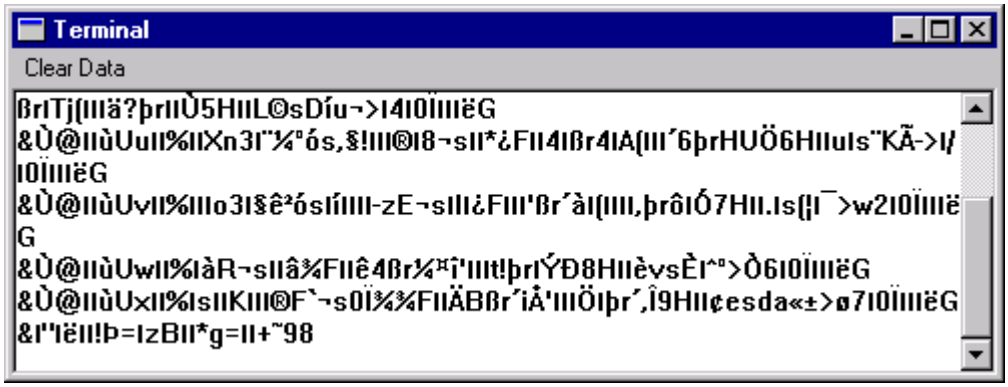


1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
00	00	00	00	00	00	00	00	11	00	00	00	00	00	11	00
H	H	H	H	H	H	H	H	U	H	H	H	H	H	U	H

17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
11	00	00	00	00	00	00	00	11	00	00	00	11	00	00	00
U	H	H	H	H	H	H	H	U	H	H	H	U	H	H	H

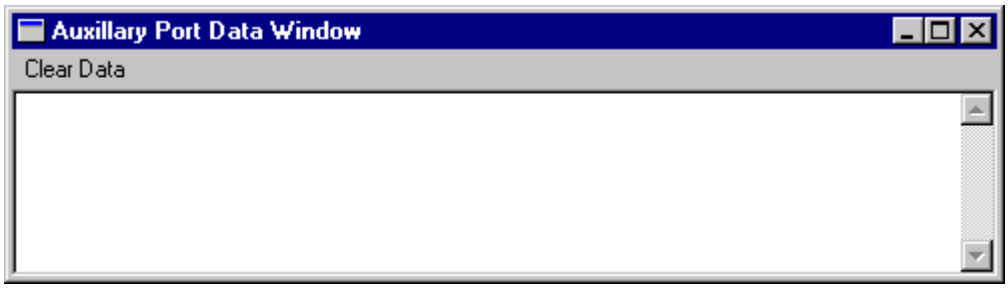
TERMINAL

The terminal window shows the messages received by the main port before its processing.



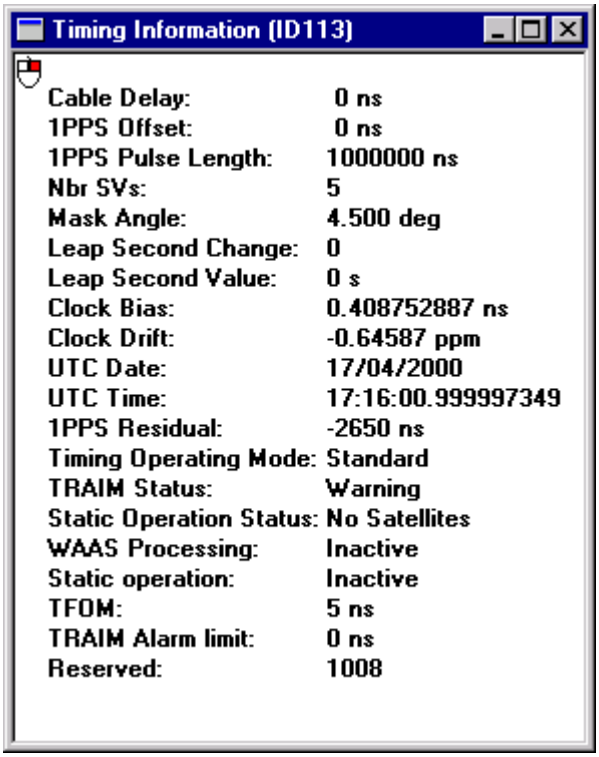
TERMINAL (AUX)

The terminal auxiliary window shows the messages received by the auxiliary port before its processing.



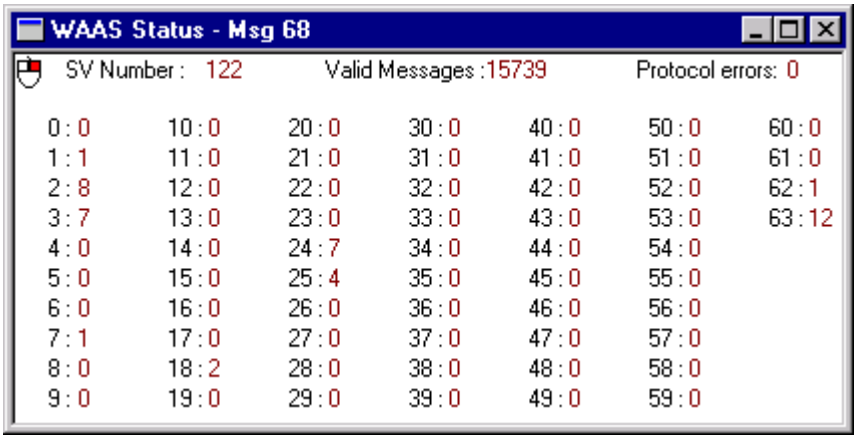
TIMING INFORMATION

Timing information window gives differents parameters that serves to know the configuration of the timing unit. The timing information is available only on a timing unit.



WAAS STATUS

WAAS status window shows the WAAS messages number received by the receiver for a specific WAAS satellites. A global count of all valid and erroneous messages is also displayed.

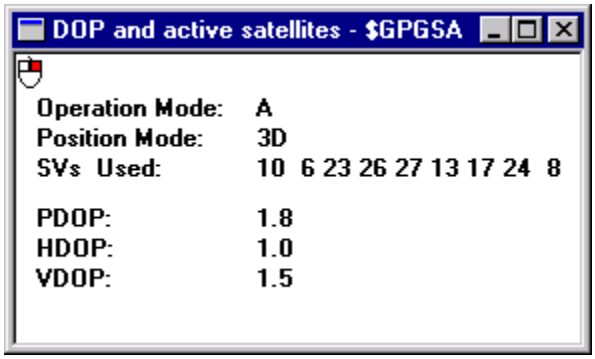


BEACON SIGNAL STATUS

Beacon receiver signal status window shows the Signal-To-Noise ratio and signal strength, the frequency and the bit rate.

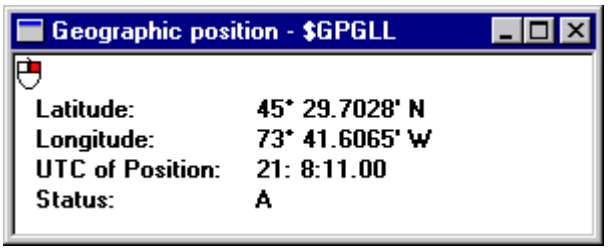
DOP & ACTIVE SVs

GPS DOP and active satellites window shows the satellites used by the receiver for navigation, the DOP values and the operating mode.



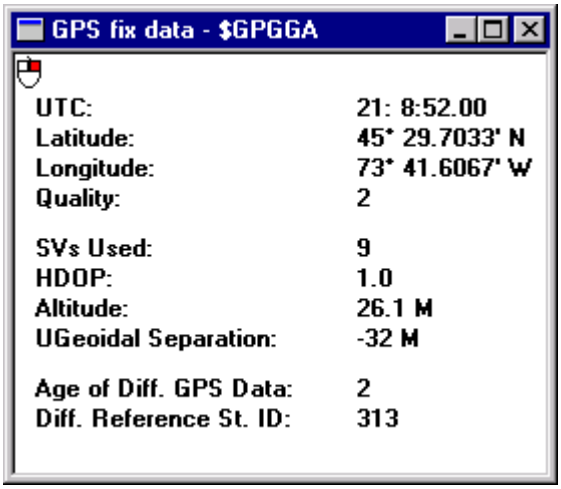
GEOGRAPHIC POSITION

Geographic position window shows the position in latitude and longitude of present solution, the time of position and the status.



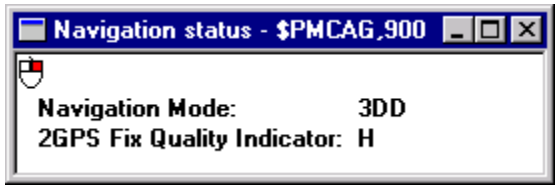
GPS FIX DATA

GPS system fix data window shows the position, the time, the number of satellites used in the solution and some information about differential corrections.



NAVIGATION STATUS

Navigation status window shows the current navigation mode and GPS fix quality indicator.

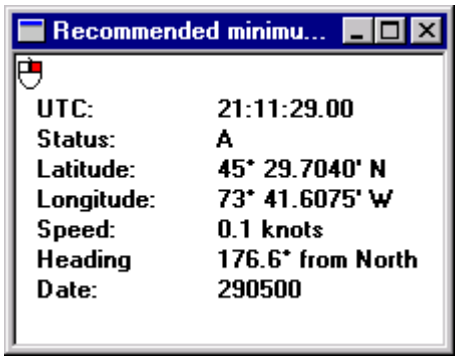


RADIOBEACON INFORMATION

Radiobeacon proprietary information window shows a response to an MSK request.

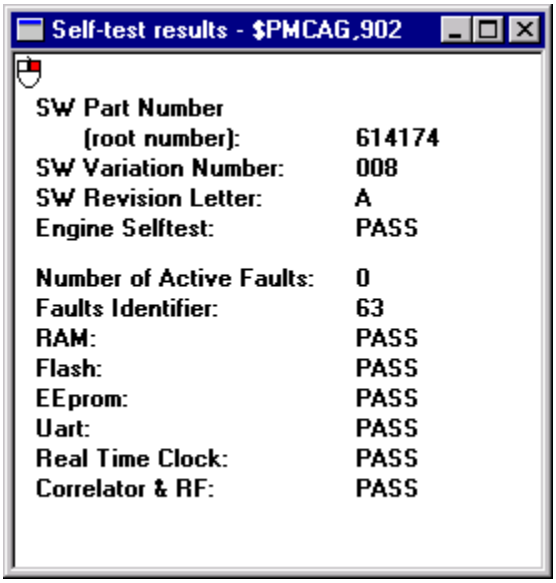
RECOMMENDED MINIMUM GPS

Recommended minimum specific GPS data window shows the time, the date, the position, the course and the speed data.



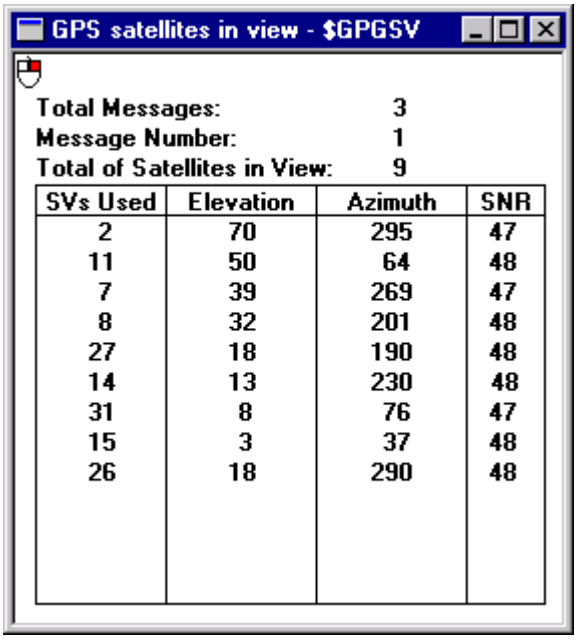
SELF-TEST RESULT

Self-test results window shows the result of GPS OEM self-test.



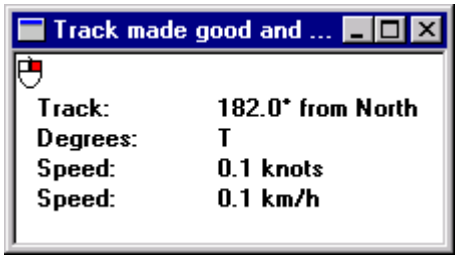
SVs IN VIEW

GPS satellites in view window shows the number of satellites in view, the satellites PRN number, the azimuth and the SNR values.



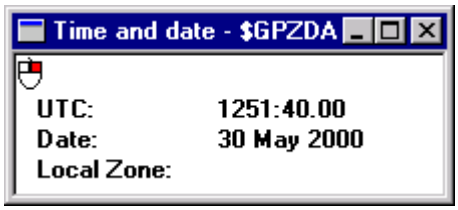
TRACK & SPEED

Track made good and ground speed window shows the actual track made good and the speed relative to the ground.



TIME & DATE

Time and date window shows the UTC time, the date and the local time zone.



TO WAYPOINT

Bearing, distance and delta-elevation to waypoint window shows this values to a specified waypoint from present solution. The solution is computed along the great circle path.

USER POSITION

User position in MGRS format window shows the current position in MGRS format and the UTC time of position.

XMIT MSG

Xmit Msg allows to transmit specific messages simply by selecting them from the Xmit Msg menu. To see the content of the message requested, the Operator has to open the window corresponding to the message; see WINDOWS above.

BASE STATUS

This option requests the RS-232 Input message ID number 47 either in one shot mode or in continuous mode at the receiver.

CHANNEL ASSIGNMENT

This option requests the RS-232 Input message ID numbers 6 and 7 either in one shot mode or in continuous mode at the receiver.

DGPS STATUS

This option requests the RS-232 Input message ID number 48 either in one shot mode or in continuous mode at receiver.

EPHEMERIS

This option requests the RS-232 Input message ID number 22 either in one shot mode or in continuous mode at the receiver.

HW/SW PART NUMBER

This option requests the RS-232 Input message ID number 45 in CMC menu and message ID $PMCAG,902 in NMEA menu in one shot mode at the receiver.

INITLINK

This option orders the receiver to stop message transmission by sending a RS-232 Input message ID number 63.

MEASUREMENT BLOCK 1Hz

This option requests the RS-232 Input message ID number 23, 1Hz, in continuous mode at the receiver.

MEASUREMENT BLOCK 2Hz

This option requests the RS-232 Input message ID number 23, 2Hz, in continuous mode at the receiver.

MEASUREMENT BLOCK 5Hz

This option requests the RS-232 Input message ID number 23, 5Hz, in continuous mode at the receiver.

MEASUREMENT BLOCK 10Hz

This option requests the RS-232 Input message ID number 23, 10Hz, in continuous mode at the receiver.

NAV SOLUTION LLH

This option requests the RS-232 Input message ID number 20 either in one shot mode or in continuous mode at the receiver.

NAV SOLUTION ▸ XYZ

This option requests the RS-232 Input message ID number 21 either in one shot mode or in continuous mode at the receiver.

RECEIVER STATUS

This option requests the RS-232 Input message ID number 49 in CMC menu and message ID $PMCAG,908 in NMEA menu either in one shot mode or in continuous mode at the receiver.

TIMING INFORMATION

This option requests the RS-232 Input message ID number 113 either in one shot mode or in continuous mode at the receiver.

WAAS STATUS

This option requests the RS-232 Input message ID number 68 either in one shot mode or in continuous mode at the receiver.

GENERAL MESSAGE REQUEST

General Message Request dialog is used to request a specific message. This option is associated with RS-232 Input Message which has 6 bytes length (no data byte information).

DOP & ACTIVE SVs

This option requests the RS-232 Input message ID $GPGSA either in one shot mode or in continuous mode at the receiver.

GEOGRAPHIC POSITION

This option requests the RS-232 Input message ID $GPGLL either in one shot mode or in continuous mode

at the receiver.

GPS FIX DATA

This option requests the RS-232 Input message ID $GPGGA either in one shot mode or in continuous mode at the receiver.

NAVIGATION STATUS

This option requests the RS-232 Input message ID $PMCAG,900 either in one shot mode or in continuous mode at the receiver.

RECEIVER STATUS

This option requests the RS-232 Input message ID $PMCAG,908 in one shot mode at the receiver.

RECOMMENDED MINIMUM GPS

This option requests the RS-232 Input message ID $GPRMC either in one shot mode or in continuous mode at the receiver.

SELF-TEST RESULT

This option requests the RS-232 Input message ID $PMCAG,902 in one shot mode at the receiver.

SVs IN VIEW

This option requests the RS-232 Input message ID $GPGSV either in one shot mode or in continuous mode at the receiver.

TRACK & SPEED

This option requests the RS-232 Input message ID $GPVTG either in one shot mode or in continuous mode at the receiver.

TIME & DATE

This option requests the RS-232 Input message ID $GPZDA either in one shot mode or in continuous mode at the receiver.

TO WAYPOINT

This option requests the RS-232 Input message ID $PMCAG,906 either in one shot mode or in continuous mode at the receiver.

USER POSITION

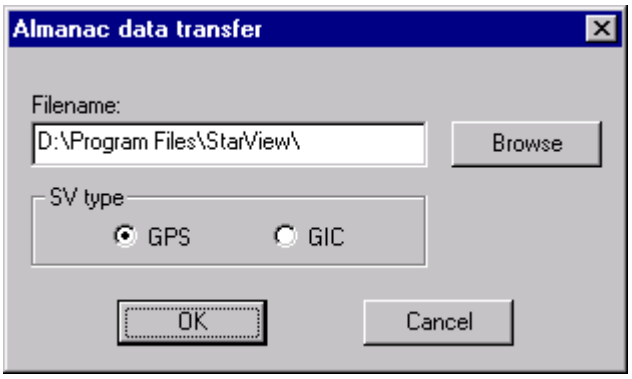
This option requests the RS-232 Input message ID $PMCAG,907 either in one shot mode or in continuous mode at the receiver.

TOOL/SETTING

Tool/Setting menu allows to transmit command to the receiver.

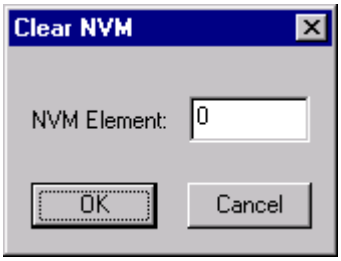
ALMANAC DATA TRANSFER

This option allows to user to download a YUMA almanac in the receiver by sending a RS-232 Input message ID number 78 and 79.



CLEAR NVM

This option erases the receiver NVM by sending a RS-232 Input message ID number 99.

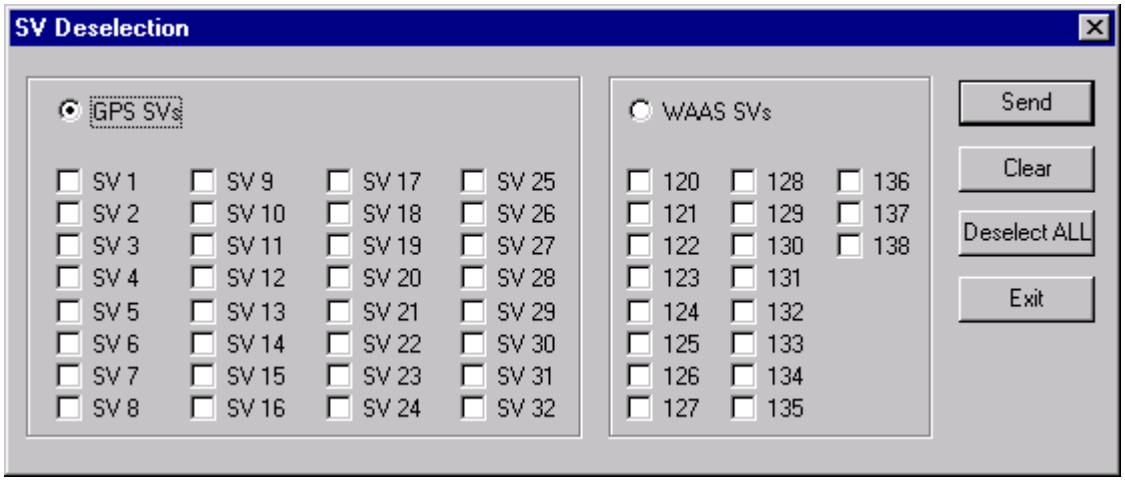


DESELECT CHANNELS

Channels deselection dialog is used to select or deselect channels. This option is associated with RS-232 Input Message ID 90.

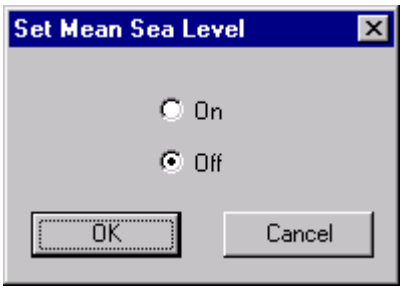
DESELECT SVS

Satellites deselection dialog is used to select or deselect satellites. This option is associated with RS-232 Input Message ID 90.



MSL MODEL USE

This message is sended in message number 86 and puts on or off the mean sea level model used.

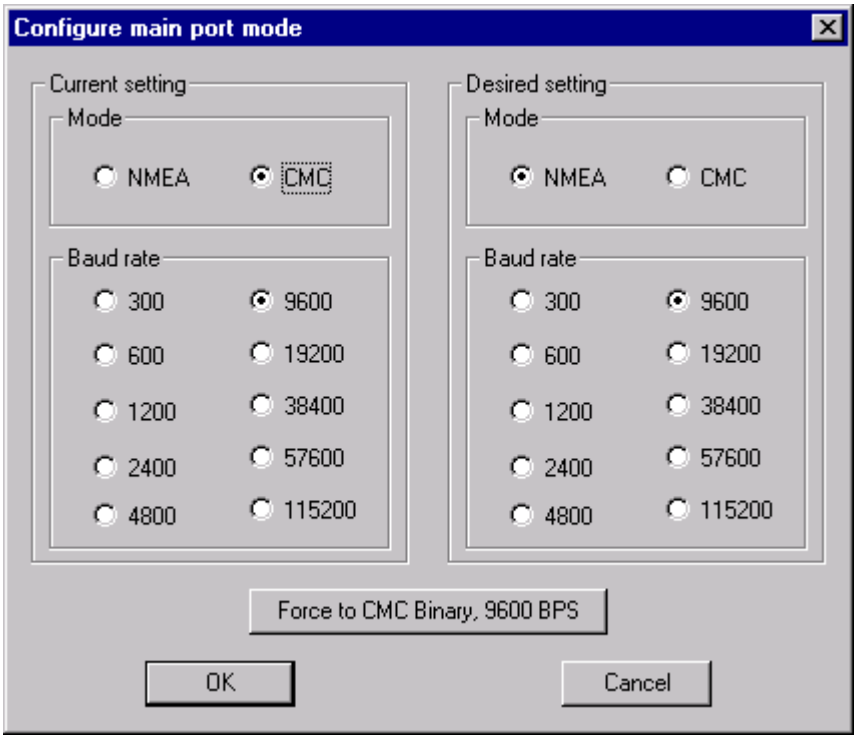


PROGRAMMING UTILITY

No programming utility is implemented in this version

PROTOCOL

Protocol displays configure main port mode dialog. This dialog is used to switch the receiver mode (binary protocol (CMC) or NMEA) and the baud rate. The button Force to CMC Binary, 9600 BPS allows to set the receiver in binary mode at 9600 BPS. This option is associated with RS-232 Input Message ID 110 in binary protocol and with message $PMCAG,000 in NMEA protocol.

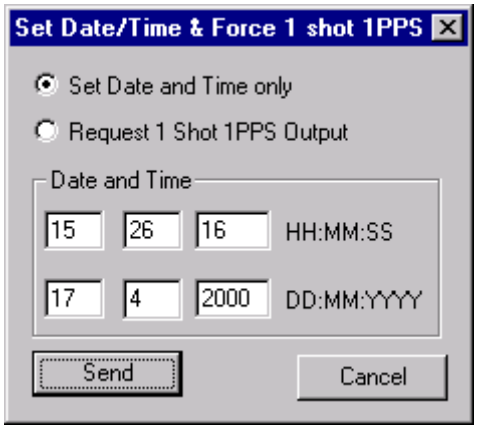


RESTART SYSTEM

Restart system is used to reset some types of receiver. This option is associated with RS-232 Input Message ID 2.

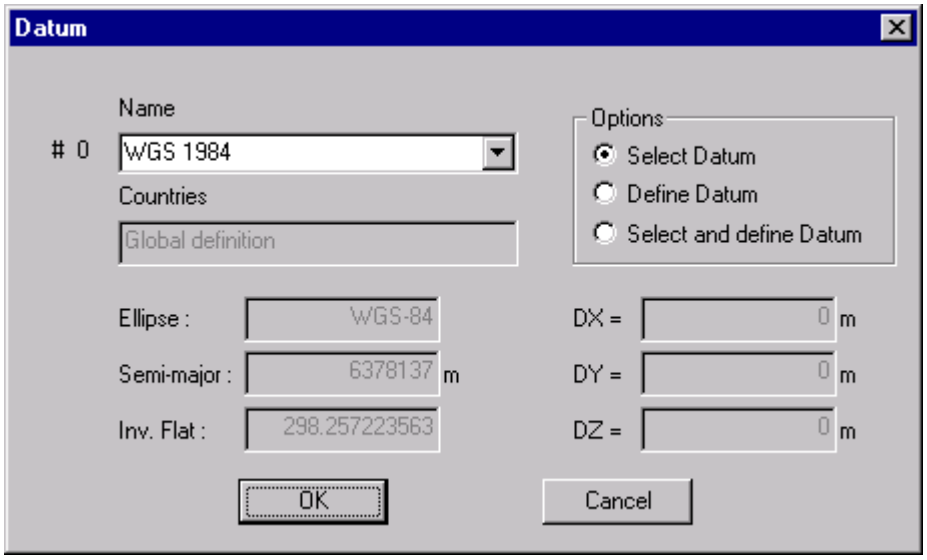
SET DATE/TIME + FORCE 1 SHOT 1PPS

Set date/time and force 1 shot 1PPS dialog is used to put a date and a time in the receiver and/or request 1 shot 1PPS output. This option is associated with RS-232 Input Message ID 103.



SET DATUM

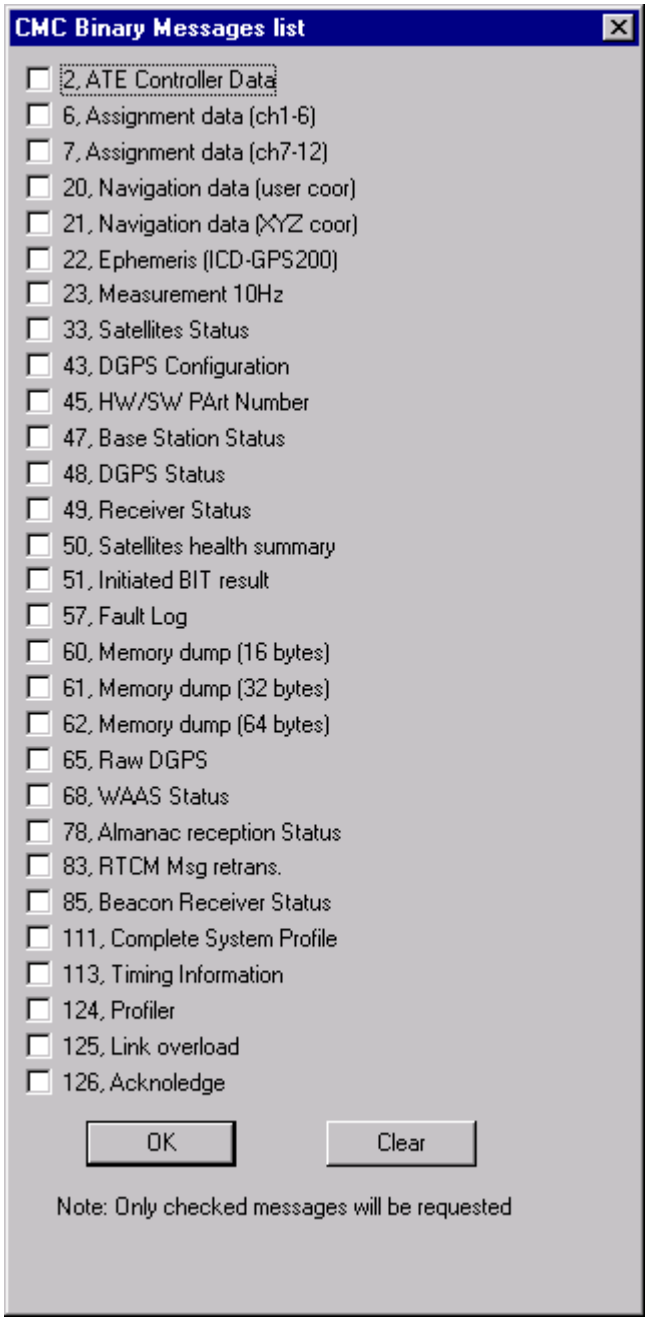
Datum dialog is used to select or define a datum for the receiver. The position compute by the receiver is according to the datum. This option is associated with RS-232 Input Message ID 88.



SET DEFAULT MSG LIST

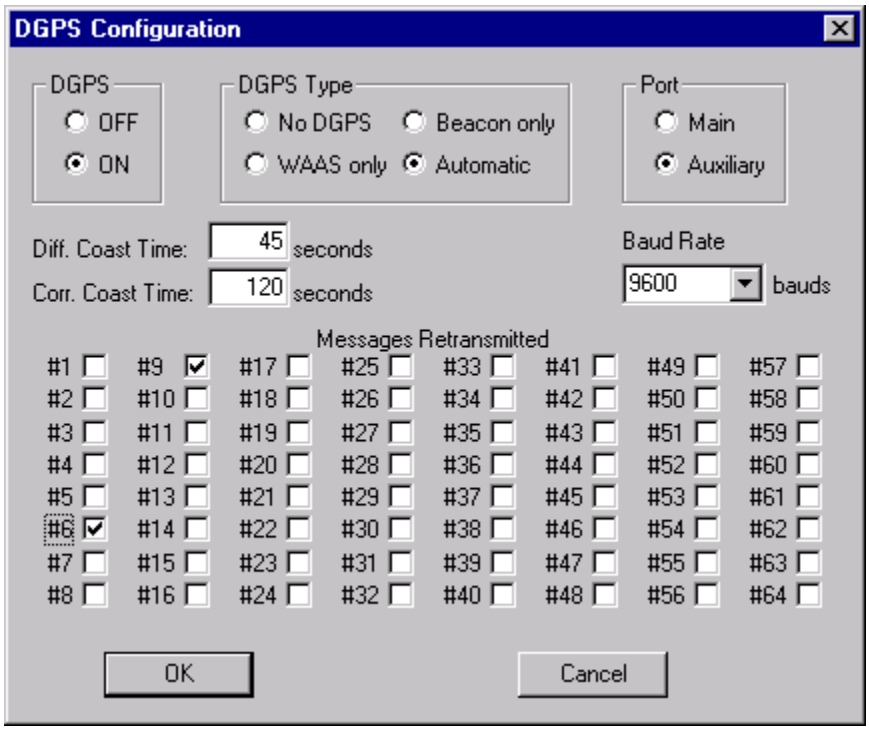
CMC binary messages list dialog is used to select messages that receiver transmit. This option is associated

with RS-232 Input Message ID 105.



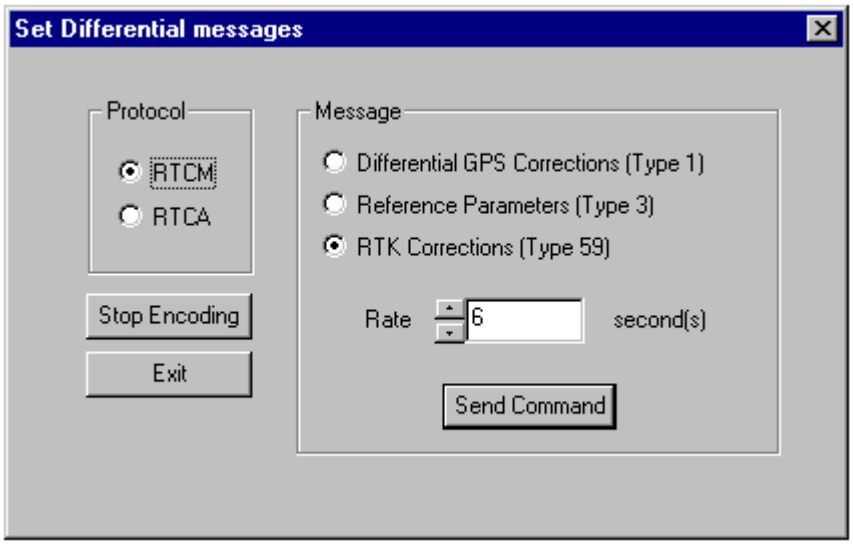
SET DGPS CONFIG

Set DGPS Configuration dialog is used to specify the parameters of the receiver when he can be in differential mode.



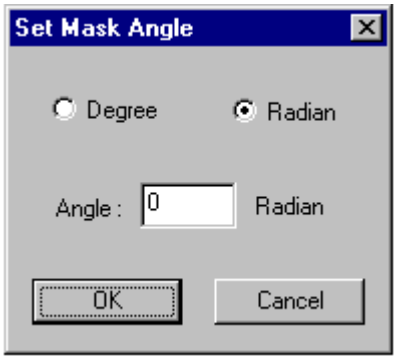
SET DIFFERENTIAL MESSAGE RATE

Set Differential Message Rate dialog is used to specify which message will be encoded by the ***ALLSTAR DGPS Base Station*** and their period. Default messages periods are set as follows: RTCM Type 1 every second, RTCM Type 3 every 10 sec. and RTCM Type 59(RTK CMC proprietary) every 6 sec. Set Differential Message Rate is associated with RS-232 Input Message ID 91.



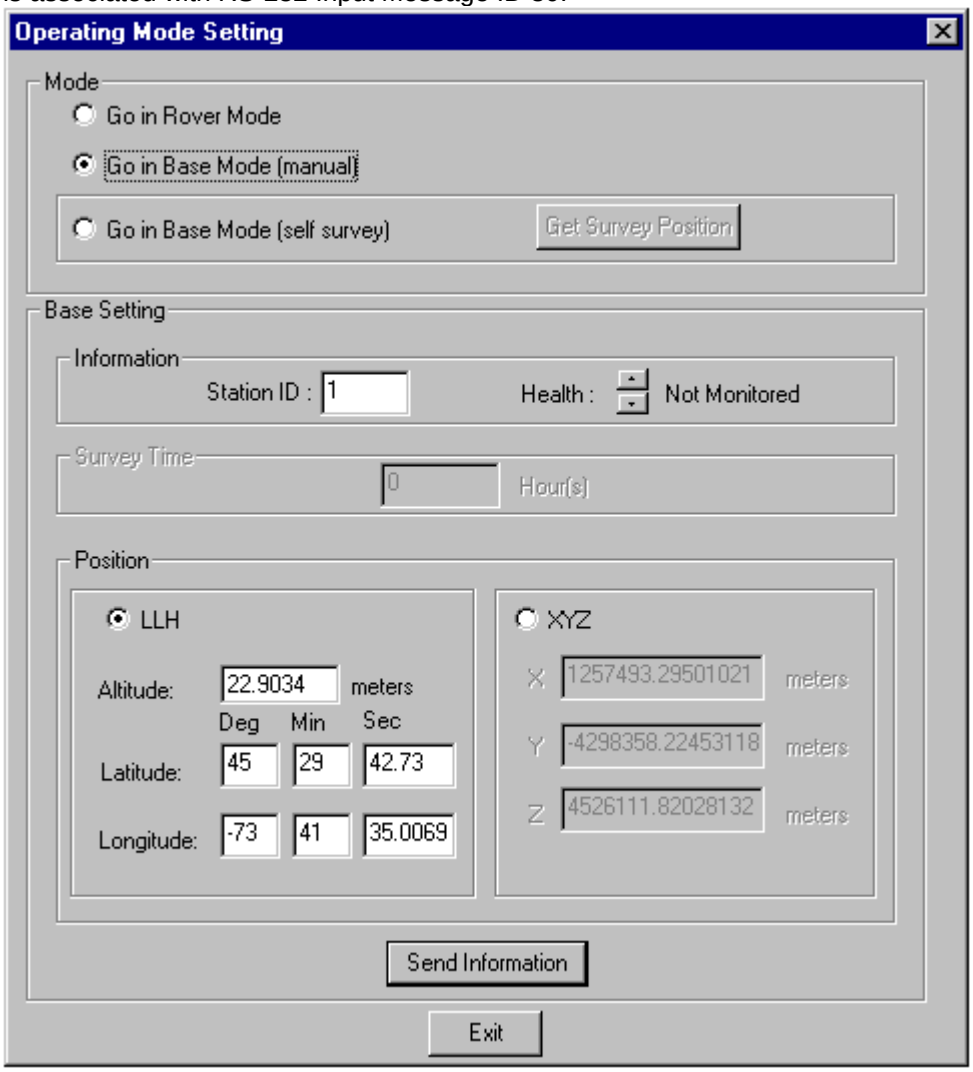
SET MASK ANGLE

Set mask angle dialog is shown below. SET MASK ANGLE Option is associated with RS-232 Input Message ID 81.



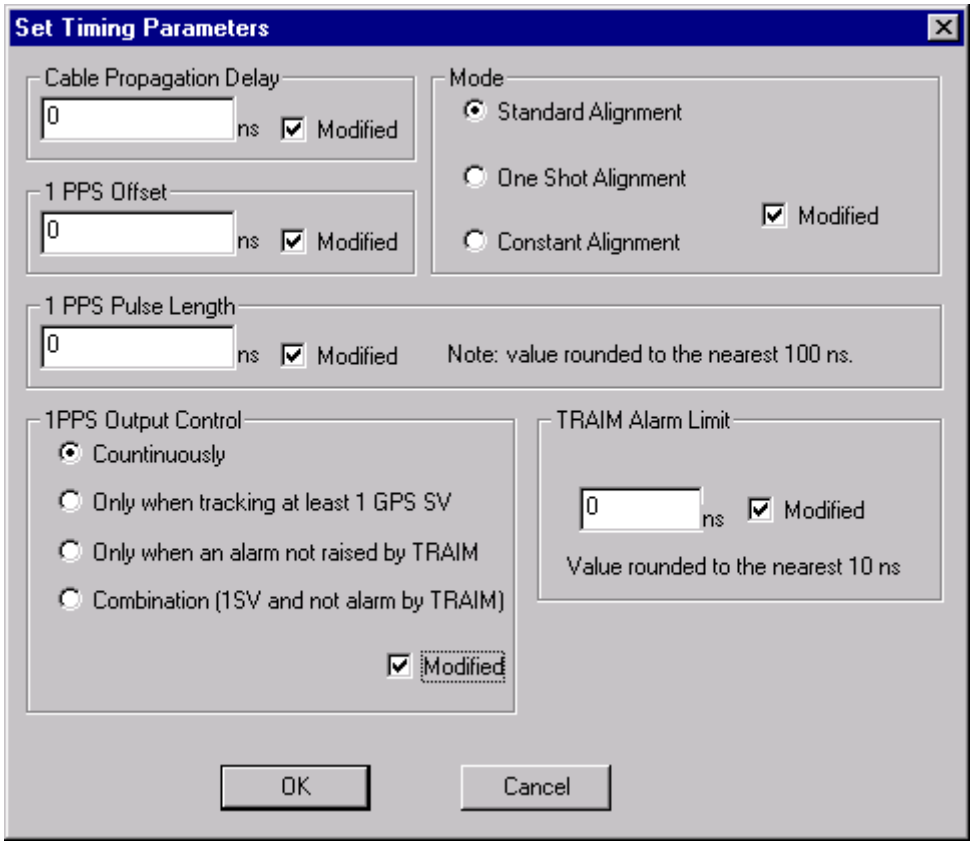
SET OPERATING MODE

Set Operating Mode dialog is used to switch a ***RT-STAR*** into a ***ALLSTAR DGPS Base Station*** or to switch a ***ALLSTAR DGPS Base Station*** into a ***RT-STAR***. Station ID, Station health and Survey time are also set by this dialog box. See Appendix A to configure a Base Station with a known position (manual mode), Appendix B to configure a Base Station without known position and Appendix C to configure a Rover. Set Operating Mode Option is associated with RS-232 Input Message ID 80.



SET TIMING PARAMETERS

Set timing parameters dialog is used to configure timing parameters. This option is associated with RS-232 Input Message ID 69.



TIME ALIGNMENT ENABLE

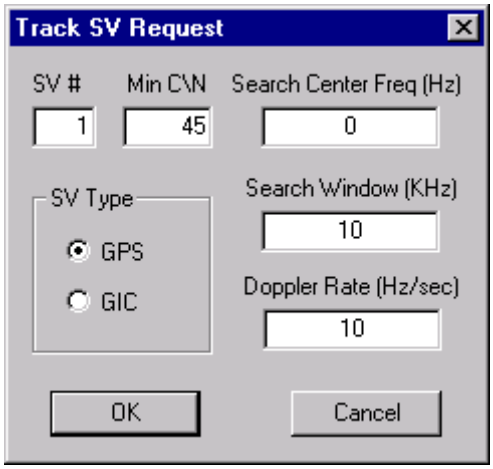
Enable time alignment is used to force a time alignment with GPS time. This option is associated with RS-232 Input Message ID 103.

TIME ALIGNMENT DISABLE

Disable time alignment is used to have a time not aligned on the GPS time. This option is associated with RS-232 Input Message ID 103.

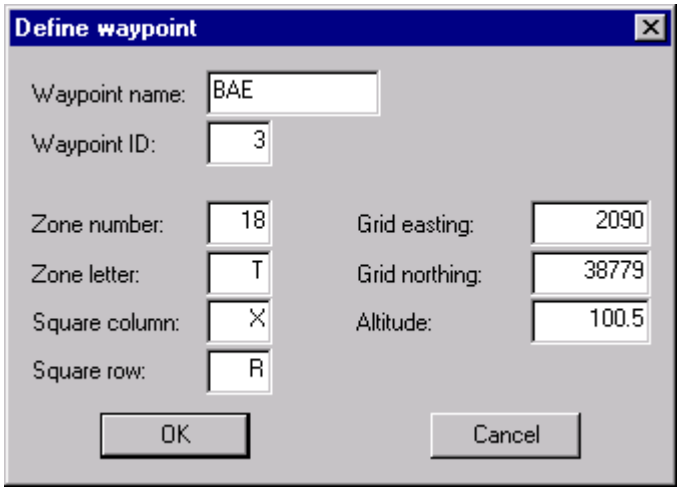
TRACK SV REQUEST

Track satellites request dialog is used to track a specific satellite. This option is associated with RS-232 Input Message ID 95.



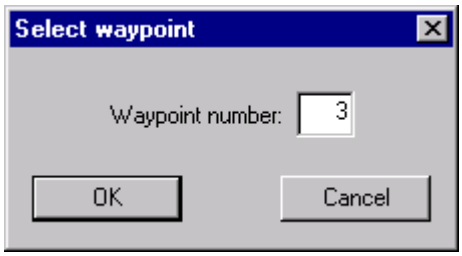
DEFINE WAYPOINT

Define waypoint dialog allows to define waypoint in MGRS format.



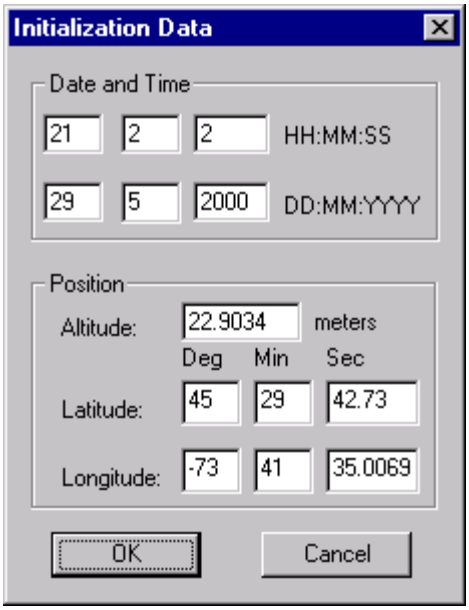
SELECT WAYPOINT

Select active waypoint dialog allows to choose a waypoint to be used in subsequent request.



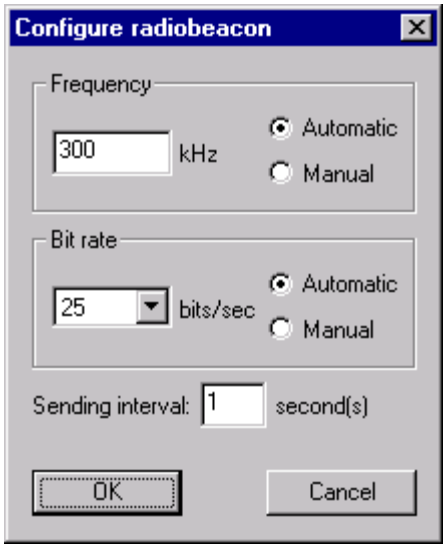
INITIALIZATION DATA

Initialization data dialig sets the receiver with reference UTC date and time and user position.



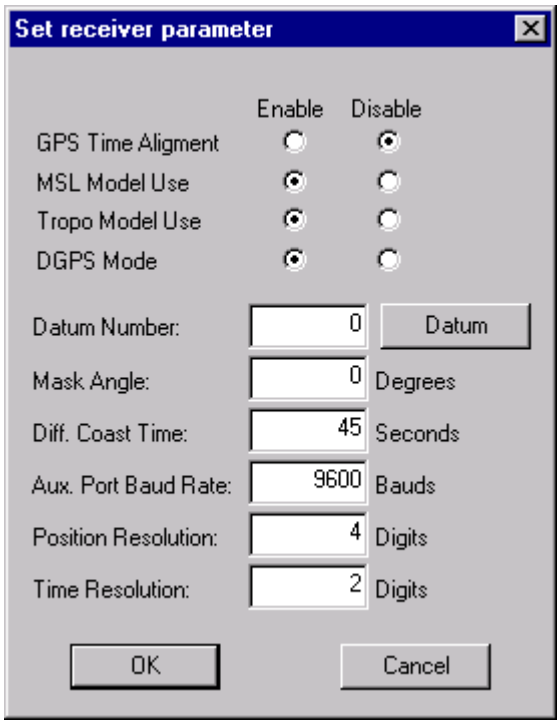
RADIOBEACON COMMAND

Radiobeacon command dialog is used to configure the set the frequency and bit rate parameters of the radiobeacon and also to set the rate of the output message MSS and $PMCAG,903.



SET RECEIVER PARAMETER

Set receiver parameter command dialog sets the receiver in the desired configuration.

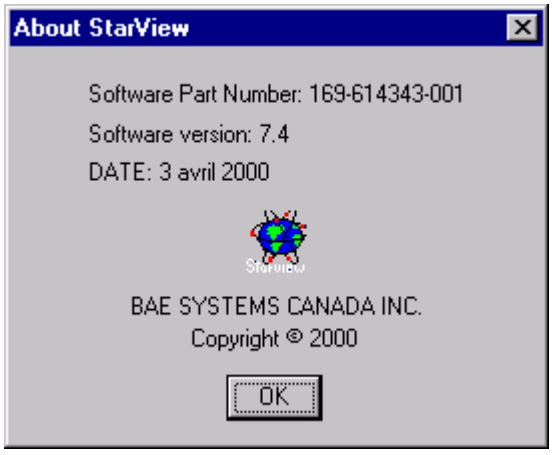


HELP

Displays the help about StarView.

ABOUT STARVIEW

About ***STARVIEW*** dialog shows the following

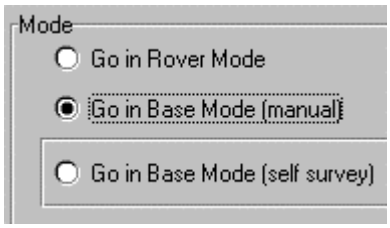


BASE STATION CONFIGURATION WITH KNOWN POSITION

a. Establish communication between the PC and the receiver. 

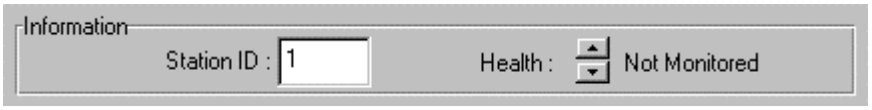
b. Select Operating Mode Setting button  , the Operating Mode Setting dialog box will appear.

c. Select the Operating Mode (Manual Mode)



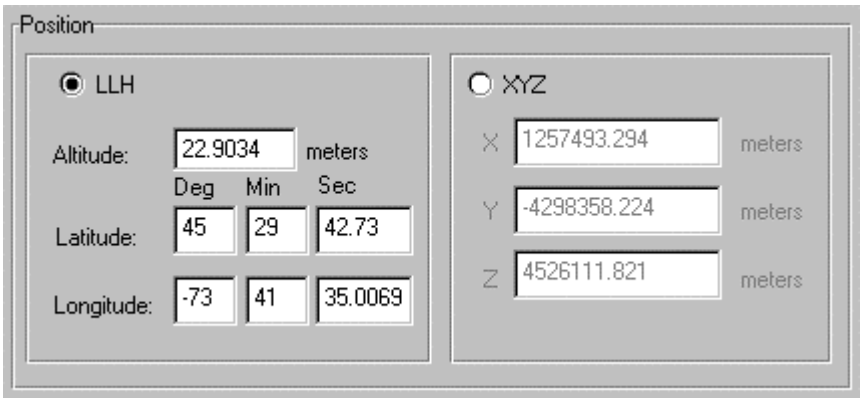
Only the fields applicable to the chosen mode are active, the others are grayed.

d. Enter Station ID and select Station Health



Note: Station ID can be a number between 0 and 1023 and Station Health parameters are described in the RTCM specification.

e. Choose Coordinates Type and enter position



f. Send information to the receiver by clicking 

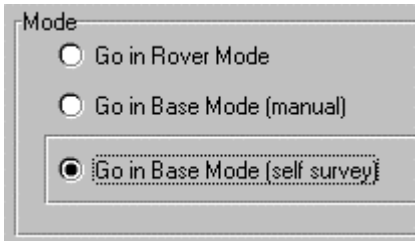
. After this operation, the board is now an ***ALLSTAR DGPS Base Station*** and the information will be saved in NVM. In the unfortunate case that the ***ALLSTAR DGPS Base Station*** loses power in this mode, it will restart in the same mode.

BASE STATION CONFIGURATION WITHOUT KNOW POSITION

a. Establish communication between the PC and the receiver.. 

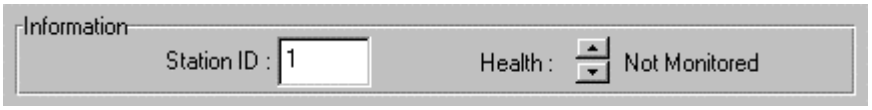
b. Select Operating Mode Setting button  , the Operating Mode Setting dialog box will appear.

c. Select Operating Mode (Survey Mode).



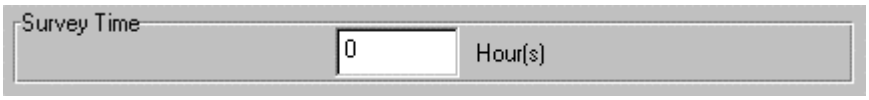
Only the fields applicable to the chosen mode are active, the others are grayed.

d. Enter Station ID and select Station Health



Note: Station ID can be a number between 0 and 1023 and Station Health parameters are described in the RTCM specification.

e. Enter Survey Time.



Note: Survey Time can be contain fraction of hours, like 12.5 hours. Typically, a self survey of 24 hours is enough to minimize effects of Selective Availability (S/A). The Survey Time is limited to 48 hours.

f. Send the information to the receiver by clicking Send Information. After this operation, the board is now an ***ALLSTAR DGPS Base Station*** and the information will be saved in NVM. In the unfortunate case that the ***ALLSTAR DGPS Base Station*** loses power in this mode the Survey Time will not be saved. When this occurs, the receiver will be in Self Survey mode but position will not be initialized until the operator press the Get Survey Position button.

The Get Survey button Get Survey Position is used to set the ***ALLSTAR DGPS Base Station*** position with the current position computed by the Navigator. This functionality is useful when the entered Survey Time is judged too long or if the ***ALLSTAR DGPS Base Station*** has reset during the Survey Mode.

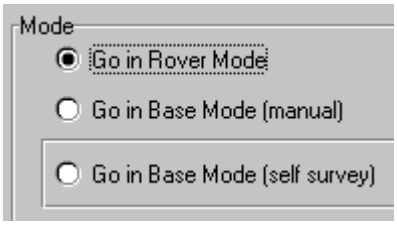
The ***ALLSTAR DGPS Base Station*** will then start to encode differential messages when the Survey Time is completed or when Get Survey Position Button is pressed.

ROVER CONFIGURATION

a. Establish communication between the PC and the receiver. 

b. Select Operating Mode Setting button  , the Operating Mode Setting dialog box will appear.

c. Select Operating Mode (Rover Mode).



Only the fields applicable to the chosen mode are active, the others are grayed.

d. Send the information to the receiver by clicking 

. After this operation, the board is now a ***RT-STAR*** receiver and the information will be saved in NVM. In the unfortunate case that the ***RT-STAR*** receiver loses power, it will restart in the same mode.

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