

SECTION XXI

DIFFERENTIAL NAVIGATION OPTION

The option described here may modify or supersede the specifications or operation described elsewhere in this manual.

This unit has differential navigation control available. Operational modes are AUTO, SURVEY STATIC, SURVEY DYNAMIC, TIME and DIFF. The power-up default is the mode in use at the previous power-down. When the unit is in differential mode and RTCM-104 data is being received the GPS receiver will use the corrections for navigation. When RTCM-104 data is not being received the GPS receiver will default to standard navigation. Use keypad or serial I/O function F53 to select the mode.

At the keypad press "FUNC/ENTR", then "5" "3". Press the up or down arrow keys to scroll through the possible operating modes. When the display shows the desired mode, press "FUNC/ENTR" to enter your choice.

On the user serial port send F53<CR>. If differential mode is the current mode a typical response will be:

```
F53 DIFF: 6 SATS<CR><LF>
```

To select differential mode send the following character string:

```
F53 DIFF<CR><LF>
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The RTCM-104 data is transmitted to the GPS receiver via an RS-232 interface. Specifications for the differential input port are:

Baud Rate:	19200, 9600, 4800, 2400, 1200, 600, or 300
Data Bits:	7 or 8
Parity:	Even, Odd, or None
Stop Bits:	1 or 2
Connector:	SERIAL I/O, male 9-pin D subminiature
Pin Assignment:	6 - RX (differential data) 5 - Ground

When the Differential Navigation option is ordered, a special 9-pin D "Differential Y" cable is provided which will allow connection to the user serial port and the differential input port on separate connectors. The "Differential Y" cable also provides the required null modem connection on the user serial port which will allow for a direct connection to a computer or terminal RS-232 serial port. The "Differential Y" cable also permits the user serial port to be configured for RS-485 operation. The "Differential Y" pin assignments are as follows:

"SERIAL I/O" DB-9S

	<u>RS-232 (RS-485)</u>
1	(RxD-)
2	RxD (RxD+)
3	TxD (TxD-)
4	(TxD+)
5	SIGNAL GROUND
6	DIFFERENTIAL INPUT
7	
8	
9	

"USER" DB-9P

	<u>RS-232 (RS-485)</u>
1	(RxD-)
2	TxD (TxD-)
3	RxD (RxD+)
4	(TxD+)
5	SIGNAL GROUND
6	
7	
8	
9	

"DIFF" DB-9S

	<u>RS-232</u>
1	
2	
3	DIFFERENTIAL INPUT
4	
5	SIGNAL GROUND
6	
7	
8	
9	

Use keypad or serial I/O function F54 to enter or request the differential port settings. The initial out-of-the-box default values are:

Baud Rate: 1200
Data Bits: 8
Parity: none
Stop Bits: 1

At the keypad press "FUNC/ENTR", then "5" "4". Press the up or down arrow keys to scroll through the possible choices for baud rate, data bits, parity and stop bits. When the display shows the desired selection, press "FUNC/ENTR" to enter your choice.

On the user serial port send F54<CR> to request the current settings. The response will be:

F54 <BAUD RATE>,<DATA BITS>,<PARITY>,<STOP BITS><CR><LF>

where

F = ASCII character F.
54 = function number.
<BAUD RATE> = 19200, 9600, 4800, 2400, 1200, 600, or 300.
<DATA BITS> = 7 or 8.
<PARITY> = e, o, or n, for even, odd, or none.
<STOP BITS> = 1 or 2.
<CR> = ASCII carriage return character.
<LF> = ASCII line feed character.

Sample request: F54<CR>
Response: F54 1200,8,n,1<CR><LF>

To set the differential port settings send a character string with the format above to the user serial port. NOTE: A <LF> character is not required on input strings.

The following entry sets the differential port settings to 9600 baud, 7 data bits, even parity, and 1 stop bit.

Sample entry: F54 9600,7,e,1<CR>
Response: OK<CR><LF>