

Appendix

A NMEA Format Tables

Message ID GGA: Global Positioning System Fixed Data

Table 5-1 Global Positioning System Fixed Data

Name	Example	Unit	Description
Message ID	\$GPGGA		GGA protocol header
UTC Time	2153.000		hhmmss.sss
Latitude	3342.6618		ddmm.mmmmmm
N/S Indicator	N		N=north or S=south
Longitude	11751.3858		dddmm.mmmmmm
E/W Indicator	W		E=east or W=west
Position Fix Indicator	1		
Satellites Used	10		Range 0 to 12
HDOP	1.2		Horizontal Dilution of Precision
MSL Altitude	27.0	meters	
Units	M	meters	
Geoid Separation	-34.2	meters	Geoid-to-ellipsoid separation. Ellipsoid altitude = MSL Altitude + Geoid Separation.
Units	M	meters	
Age of Diff. Corr.		sec	Null fields when DGPS is not used
Diff. Ref. Station ID	0000		
Checksum	*5E		
<CR><LF>			End of message termination

Table 5-2 Position Fix Indicator Value

Position Fix Indicator Value	Description
0	Fix not available or invalid
1	GPS SPS Mode, fix valid