

Iridium SVP-B transmission format

Version #000 (with GPS)

By Pierre Blouch, Météo-France
January 18th, 2010

Parameter	Bits	Pos	Offset	Max	Formula
Format identifier	8	0	0	254	Forced to 0 in present version
Year	7	8	2000	2126	Year = n + 2000
Month	4	15	0	12	Month = n
Day	6	19	0	31	Day = n
Hour	5	25	0	23	Hour = n
Minute	6	30	0	59	Minute = n
Air pressure	11	36	850.0	1054.6	AP (hPa) = n*0.1 + 850
SST	12	47	-5.00	35.94	SST (°C) = n*0.01 - 5
Pressure tendency	9	59	-25.5	25.5	dP (hPa) = n*0.1 - 25.5
Submergence count	6	68	0	100	Subm. (%) = n * 1.6129
Battery voltage	6	74	5	17.4	Vbat (V) = n*0.2 + 5
Iridium transmission duration	8	80	0	254	SBDT (s) = n
2 nd Iridium Tech. parameter	8	88	0	254	See table 2
GPS fix time delay	12	96	0	4094	Delay (min) = n
GPS Latitude	20	108	-90	90	Lat (deg) = n*0.0002 - 90
GPS Longitude	21	128	-180	180	Lon (deg) = n*0.0002 - 180
1 st GPS Technical parameter	7	149	0	126	See table 2
2 nd GPS Technical parameter	4	156	0	14	See table 2

Table 1 - Dataformat

Remarks :

- Format Id. : #000 to #019 are devoted to SVP-B drifters.
The present version is format **version #000**.
- Column "Bits" : length of the word in bits for the parameter;
- Column "Pos" : Start bit in the message for the parameter;
- For some parameters, "Max" is just an approximation;
- Values for missing sensor or computation should be "all bits fitted to 1";
- Total length of the basic version #000 message: 160 bits i.e. 20 bytes;
- In case a GPS fix is not available at the observation time, the previous position is reported with its time delay in minutes. In case this position is older than 4094 minutes, 4095 is reported in the message (i.e. all bits fitted to 1).

	2 nd Iridium parameter	1 st GPS parameter	2 nd GPS parameter
Marlin	Iridium transm. retry	Time to first GPS fix ¹	Nb of GPS satellites
Metoccean	Unused	Time to first GPS fix ¹	Unused
Pacific Gyre	Unused ?	Time to first GPS fix ¹ ?	2D or 3D GPS fix

Table 2 – Examples of manufacturer's choices for technological parameters