Technical Brief
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$PRAVE Message Format

By John Sonnenberg *Raveon Technologies Corp*

Overview

The $PRAVE message is sent out the *RV-M7 GX* when it is configured for **GPS 2** mode of operation. This mode is typically used with the *RavTrack PC* program, or other computer programs that can process position and status information. It is sent at 38.4K bytes/second out the serial port.

Along with ID and position information, it contains a host of other status information. The length of this message may exceed he standard NMEA limit of 79 characters. Any product or software that uses this message must take this into account.

Message Format

Following is a list of the fields sent in this message

Field	Usage	Comments
1	$PRAVE	Raveon Proprietary Header
2	From ID	The ID of the transponder that transmitted its position over the air. It is a decimal number, 0 – 9999 when used with Raveon M7 series of GPS transponders. It may be 1-8 decimal digits with other GPS transponders.
3	To ID	The ID that this position report was sent to. It is a decimal number, 0 – 9999 when used with Raveon M7 series of GPS transponders. It may be 1-8 decimal digits with other GPS transponders.
4	Latitude	dddmm.mmmm format. It is signed. + is north, - is south. No sign means north. Note: typically there are 4 decimal places, but as few as 0 decimal places are possible. Null field if no GPS lock.
5	Longitude	dddmm.mmmm format. It is signed. + is east, - is west. No sign means east. Note: typically there are 4 decimal places, but as few as 0 decimal places are possible. Null field if no GPS lock.
6	UTC time	The UTC time at the time the transmission was made. Hhmmss format. Null field if no GPS lock.
7	GPS Status	0=not valid position. 1=GPS locked and valid position. 2=Differential or WAAS fix.
8	Num Satellites	The number of satellites in view
9	Altitude	The altitude in meters. Null field if no GPS lock.
10	Temperature	The internal temperature of the RV-M7 in degrees C. Typically this is 5-20 degrees above ambient.
11	Voltage	Input voltage to the device that sent this position.

12	IO status	A decimal number representing the binary inputs.
13	RSSI	The signal-strength of this message as measured by the receiver, in dBm. Note, if the message went through a repeater, it is the signal lever of the repeated message.
14	Speed	The speed of the device in km/hour, 0-255
15	Heading	The heading of the device 0-360 degrees
16	Status	Status flags received from the device. Not all products support generating all status flag codes. NULL means no alerts. "**P**" means a proximity alert. "**M**" means man-down alert "**A**" General alert, usually due to pressing an alert button "**C**" Critical alert, usually due to pressing and holding alert button "**I**" Impact alert "**V**" Vibration "**S**" Service required on product "**X**" Gas fume sensor detects CO or other gas.
17	Spare	A spare field. May be used for UTC date in the future. Typically NULL.
18 (Optional Field)	Optional Odometer	The odometer reading if this option is available. It is in kilometers and may or may not have decimal places. Most reported values typically have are one decimal place. NULL/empty or no field if reading is not available or transponder did not send it. Firmware version D1 or higher of the M7 supports this.
	*	The "*" NMEA end-of-message identifier.
	Checksum	The NMEA 0183 checksum.

Example Standard $PRAVE Sentence:

$PRAVE,0001,0001,3308.9051,-11713.1164,195348,1,10,168,31,13.3,3,-83,0,0,,*66

This example shows a unit at 33° 8.9051 north latitude and 117° 13.1164 east longitude. It is not moving (0 speed). Its signal strength was -83dBm. Its altitude is 168 meters.

Example $PRAVE with Odometer Readings:

$PRAVE,0001,0001,3308.9051,-11713.1164,195348,1,10,168,31,13.3,3,-83,0,0,,1003.4*66

This example shows a unit at 33° 8.9051 north latitude and 117° 13.1164 east longitude. It is not moving (0 speed). It's signal strength was -83dBm. Its altitude is 168 meters. The odometer is 1003.4km.

Raveon Technologies Corporation

2461 Impala Drive
Carlsbad, CA 92010
sales@raveontech.com
760-444-5995