

You are here: [Logs](#) > [View Logs](#) > [SPAN Logs](#) > RAWIMUX

# RAWIMUX

## IMU Data Extended

**Platform:** OEM719, OEM729, OEM7500, OEM7600, OEM7700, OEM7720, PwrPak7, SPAN CPT7, SMART7-S, SMART7-SI

**Firmware Stream:** OEM7, Agriculture

This log is an extended version of the RAWIMU log intended for use with post-processing. The extended version includes IMU information that is used by the NovAtel Inertial Explorer post-processing software.

The change in velocity (acceleration) and angle (rotation rate) scale factors for each IMU type can be found in [Table: Raw IMU Scale Factors](#). Multiply the appropriate scale factor by the count value for the velocity (field 7-9) and angle (field 10-12) increments.



To obtain acceleration in m/s/s or rotation rate in rad/s, multiply the velocity/rotation increments by the output rate of the IMU:

- 100 Hz for HG1700, HG1900, HG1930 and HG4930
- 125 Hz for STIM300, G320N, PwrPak7-E1, PwrPak7D-E1 and SMART7-S
- 200 Hz for ISA-100C, iMAR-FSAS, LN200, KVBH1750 and ADIS16488

The units of acceleration and rotation rate will depend on the IMU Scale Factors.

This log is output in the IMU Body frame.

**Message ID:** 1461

**Log Type:** Asynch

**Recommended Input:**

log rawimuxb onnew

**ASCII example:**

```
#RAWIMUXA, COM1, 0, 81.5, FINESTEERING, 1691, 410338.819, 024c0020, 3fd1, 43495;00, 5, 1691, 410338.818721000, 00170705, -113836, -464281, 43146813, 89, 11346, 181*01cd06bf
```

Field	Field Type	Description	Format	Binary Bytes	Binary Offset
1	RAWIMUX Header	Log header. See <a href="#">Messages</a> for more information.	-	H	0

Field	Field Type	Description	Format	Binary Bytes	Binary Offset
2	IMU Info	<p>IMU Info Bits</p> <p>Bit 0: If set, an IMU error was detected. Check the IMU Status field for details.</p> <p>Bit 1: If set, the IMU data is encrypted and should not be used.</p> <p>Bits 2 to 7: Reserved</p>	Hex Uchar	1	H
3	IMU Type	<p>IMU Type identifier.</p> <p>See <a href="#">Table: IMU Type</a>.</p>	Uchar	1	H+1
4	GNSS Week	GNSS Week	Ushort	2	H+2
5	GNSS Week Seconds	Seconds from week start	Double	8	H+4
6	IMU Status	<p>The status of the IMU. This field is given in a fixed length (n) array of bytes in binary but in ASCII or Abbreviated ASCII is converted into 2 character hexadecimal pairs.</p> <p>For the raw IMU status, see one of the following tables:</p> <ul style="list-style-type: none"> <li>• <a href="#">Table: iIMU-FSAS IMU Status</a></li> <li>• <a href="#">Table: HG1700 IMU Status</a></li> <li>• <a href="#">Table: LN200 IMU Status</a></li> <li>• <a href="#">Table: ISA-100C IMU Status</a></li> <li>• <a href="#">Table: IMU-CPT IMU Status</a></li> <li>• <a href="#">Table: IMU-KVH1750 IMU Status</a></li> <li>• <a href="#">Table: HG1900 and HG1930 IMU Status</a></li> <li>• <a href="#">Table: HG4930 IMU Status</a></li> <li>• <a href="#">Table: ADIS16488 and IMU-IGM-A1 IMU Status</a></li> <li>• <a href="#">Table: STIM300 and IMU-IGM-S1 IMU Status</a></li> <li>• <a href="#">Table: <math>\mu</math>IMU IMU Status</a></li> <li>• <a href="#">Table: G320N IMU Status</a></li> </ul> <p>Also refer to Interface Control Documentation as provided by Honeywell or Northrop Grumman.</p>	Hex Ulong	4	H+12
7	Z Accel	Change in velocity count along Z-axis.	Long	4	H+16
8	-(Y Accel)	<p>-(Change in velocity count along y-axis.)</p> <p>A negative value implies the output is along the positive y-axis marked on the IMU. A positive value implies the change is in the direction opposite to that of the y-axis marked on the IMU.</p>	Long	4	H+20

Field	Field Type	Description	Format	Binary Bytes	Binary Offset
9	X Accel	Change in velocity count along x axis.	Long	4	H+24
10	Z Gyro	Change in angle count around z axis. Right-handed	Long	4	H+28
11	-(Y Gyro)	- (Change in angle count around y axis.) Right-handed A negative value implies the output is along the positive y-axis marked on the IMU. A positive value implies the change is in the direction opposite to that of the y-axis marked on the IMU.	Long	4	H+32
12	X Gyro	Change in angle count around x axis. Right-handed	Long	4	H+36
13	XXXX	32-bit CRC (ASCII, Binary, and Short Binary only)	Hex	4	H+40
14	[CR][LF]	Sentence terminator (ASCII only)	-	-	-

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7.06.01 / OA7CR0501RN0000