1. Overview

The FSP200 is a 6-axis IMU processor that provides heading and orientation outputs. When connected to one of several supported sensors, it performs all the accelerometer and gyroscope sensor fusion processing necessary to produce stable and accurate heading and orientation outputs. The FSP200 is suitable for use in unmanned ground navigation systems such as consumer floor care products, garden and lawn robots, pool cleaners and follow me and assistant robots used in the hospitality and medical markets.
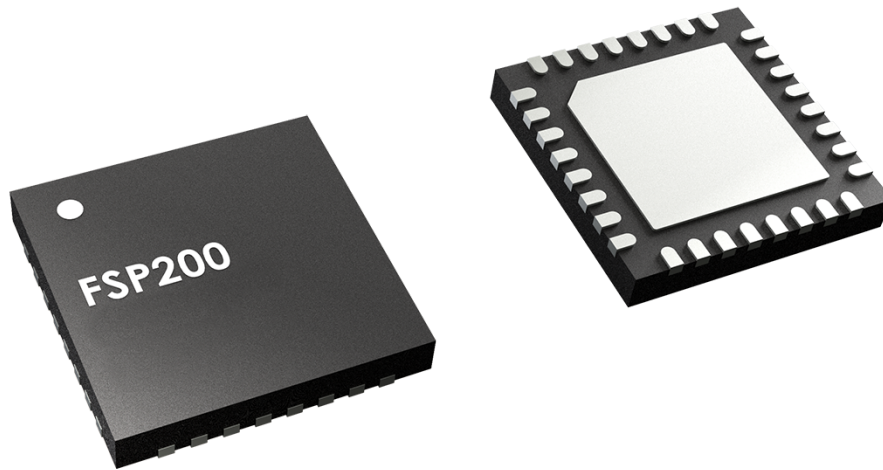

Figure 1: FSP200

1.1. Data Logging Needs

The outputs in UART-RVC mode have already been statically and dynamically calibrated. Determining how well the calibrations are working can sometimes be difficult. Having access to raw sensor data and other information allows CEVA's Hillcrest Labs business unit to perform detailed analyses of the system's performance.

2. Entering UART-RVC-LOG Mode

UART-RVC-LOG mode is entered by setting the PS bits to 00 and then resetting the FSP200. This mode of operation is used to log raw sensor data for troubleshooting in UART-RVC mode. Please forward a complete log of all packets including test messages to the Hillcrest Labs support team (support@hillcrestlabs.com) for analysis.

3. UART-RVC-LOG mode outputs

3.1. Following Reset

Immediately after reset the FSP200 sends its normal startup message. After this message it sends several messages of test data. After these messages are sent, steady state operation begins.

3.2. Steady State Outputs

During steady state operation the FSP200 periodically sends two messages. The first message is the normal output message. It begins with a header of 0xAAAA and ends with a checksum. This message is 19 bytes long.

The second message is a test message. It begins with a header of 0xBBBB and ends with a checksum. The checksum is calculated in the same way as it is for the normal message. This message is 24 bytes long.

The host application should ignore the test message. Although all the messages are sent periodically, they may not be sent at the same period and the order of the messages may vary over time. The host application should use the header and checksum values to identify message types so that it will process only the normal messages.

3. References

1. 1000-4121 FSP200 Datasheet, Hillcrest Labs
2. 1000-3625 SH-2 Reference Manual, Hillcrest Labs

Notices

www.ceva-dsp.com

FOR MORE
INFORMATION: