TN1189
Technical note

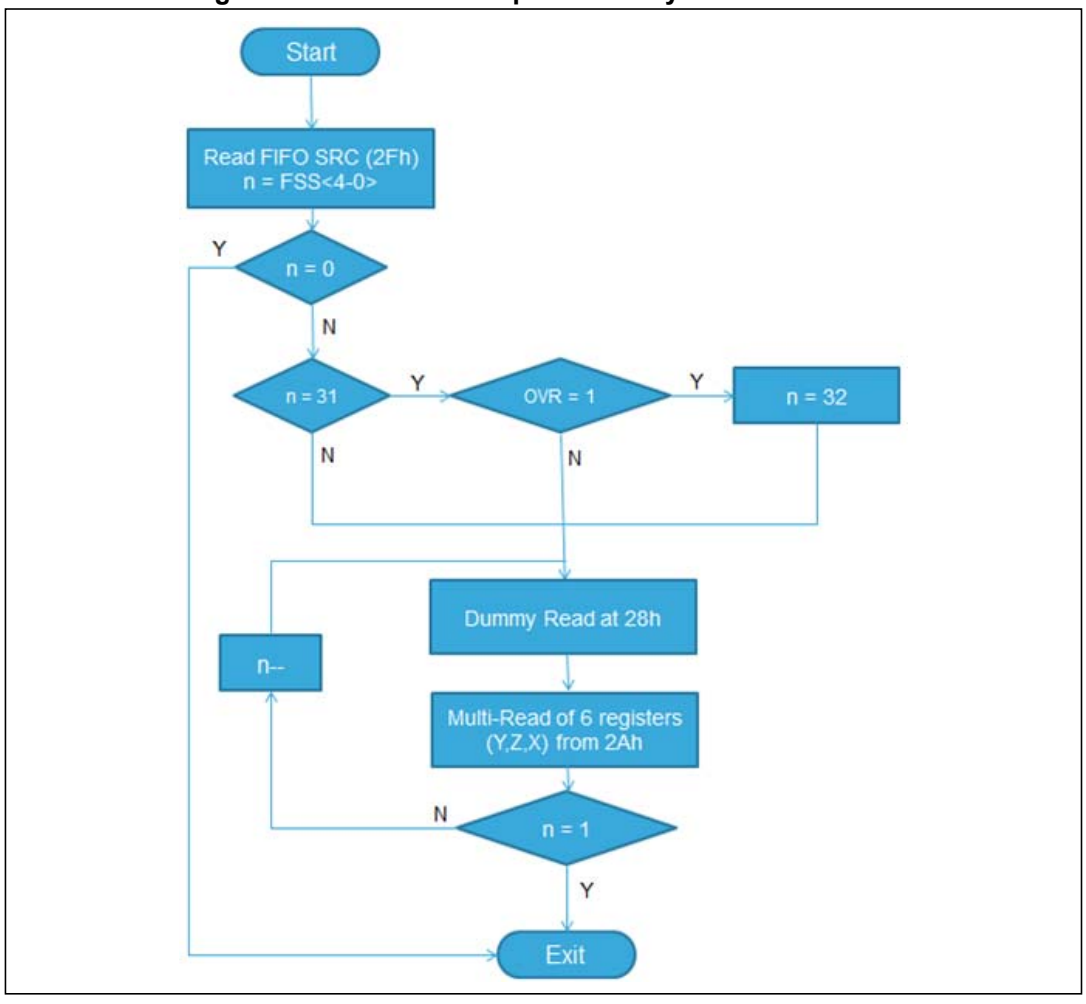
A3G4250D: supplementary data related to the 3-axis digital output gyroscope

Introduction

The purpose of this technical note is to provide supplementary information related to the A3G4250D gyroscope (3D digital gyroscope for automotive telematics/navigation applications). This document explains the procedure to execute the asynchronous mode reading of data sets based on device behavior in consumer applications.

This document does not replace the content of the A3G4205D datasheet, with the exception of Figure 10 on page 20 in paragraph 3.2.4, which is modified as follows in the figure below.

Figure 1. FIFO access sequence in asynchronous mode



Reading data from FIFO in asynchronous mode

The flow chart in *Figure 1* illustrates how to read data from FIFO in asynchronous mode.

As explained in the product datasheet (see “Digital Interfaces”, Chapter 5, from page 23), multi-byte reading (a.k.a. multi-read) is a smart modality which allows reading 6 bytes consecutively, with significant time saving compared to single byte reading.

Hereafter it is explicitly indicated the part of the reading sequence starting from the dummy read at '28h':

1. Single read from register 28h
2. "Multi-Read": sequential reading of 2Ah, 2Bh, 2Ch, 2Dh, 28h, 29h

This procedure must be repeated for each dataset (X/Y/Z) in the FIFO:

- FSS times, if FSS $\leq$ 31
- (FSS + 1) times, if (FSS = 31) & (OVR = 1)

This procedure is valid whenever an asynchronous reading of the FIFO is to be executed, both in "Stream" mode and in "FIFO" mode.

Revision history

Table 1. Document revision history

Date	Revision	Changes
05-Aug-2014	1	Initial release.