



FIT1e Revision

D00001454 Rev1.1

Copyright Information and Usage Notice

This information disclosed herein is the exclusive property of Dynastream Innovations Inc. No part of this publication may be reproduced or transmitted in any form or by any means including electronic storage, reproduction, execution or transmission without the prior written consent of Dynastream Innovations Inc. The recipient of this document by its retention and use agrees to respect the copyright of the information contained herein.

The information contained in this document is subject to change without notice and should not be construed as a commitment by Dynastream Innovations Inc. unless such commitment is expressly given in a covering document.

The Dynastream Innovations Inc. ANT Products described by the information in this document are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Dynastream product could create a situation where personal injury or death may occur. If you use the Products for such unintended and unauthorized applications, you do so at your own risk and you shall indemnify and hold Dynastream and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Dynastream was negligent regarding the design or manufacture of the Product.

©2011 Dynastream Innovations Inc. All Rights Reserved.

Table of Contents

1 Revision Details.....4

1.1 Rev A4

1.2 Rev B4

1.3 Rev C4

1.4 Rev D5

2 Identifying FIT1e Revision.....6

2.1 Product Tracking Code6

2.2 Firmware Version String6

Since the launch in 2009, FIT1e module has seen a rapid and growing adoption by major fitness equipment manufacturers. To better meet the requirements from customers and to provide better exercise experiences to end users, FIT1e has also gone through several upgrades. The table below serves as a high level summary of these upgrades.

Ver.	Description
D	Removed file size limit. Allowed for file transfer automatic retries. Improved compatibility with Garmin FR60 watch.
C	Bug fixed where contents of file are duplicated and wrongly labelled.
B	Able to download up to 10 user selected FIT Files.
A	Initial Production Release.

While we aim to have smooth transition each time after reviewing all the fitness equipments use cases, there is no guarantee to exhaust all the previous version modules in the channel. It is up to the manufacturers to ensure the appropriate version of FIT1e is used in the fitness equipments and negative user experiences are minimized. This document details these upgrades and provides methods to identify the FIT1e revisions.

1 Revision Details

1.1 Rev A

This is the first production release. In ANT-FS operation, the FIT1e downloads up to 3 files -1 user profile, 1 selected sport file, and 1 selected course/workout file.

Known Issues:

1. ANT-FS file download size is limited to the block size definition of the ANT-FS client device, e.g. 512 bytes for Garmin Forerunner 310XT and no limit for Garmin FR60
2. File transfer errors do not result in automatic retries. FIT1e just reports an EVENT_TRANSFER_RX_FAIL and request the next available file for download (if applicable) or, if no other files exist, will simply stop sending any more requests.

1.2 Rev B

Enhancements:

In ANT-FS operation, the FIT1e will request the first settings file that appears in the directory, and the first user selected FIT files that appear in the directory (up to 9 if a profile is found, up to 10 otherwise).

Known Issues:

1. ANT-FS file download size is limited to the block size definition of the ANT-FS client device, e.g. 512 bytes for Garmin Forerunner 310XT and no limit for Garmin FR60
2. File transfer errors do not result in automatic retries. FIT1e just reports an EVENT_TRANSFER_RX_FAIL and request the next available file for download (if applicable) or, if no other files exist, will simply stop sending any more requests.
3. Bug introduced where contents of second file downloaded is typically in error and contains the contents of the first file downloaded. The download of the user settings file is not affected.

1.3 Rev C

Enhancements:

The file content bug aforementioned was solved

Known Issues:

1. ANT-FS file download size is limited to the block size definition of the ANT-FS client device, e.g. 512 bytes for Garmin Forerunner 310XT and no limit for Garmin FR60
2. File transfer errors do not result in automatic retries. FIT1e just reports an `EVENT_TRANSFER_RX_FAIL` and request the next available file for download (if applicable) or, if no other files exist, will simply stop sending any more requests.
3. Compatibility issue with Garmin FR60 watch.

FR60 loses its connection to the FIT1e after pairing and downloading its files. The impact on a user experience is that the FE channel closes and any HRM that was discovered via the watch profile stops being tracked as well. This is not an issue if FIT1e is placed in "IN USE" state immediately after pairing to the watch (`FIT_WATCH_PAIR` EVENT).

1.4 Rev D

Enhancements:

1. The ANT-FS file download size limit to the block size definition of the client device is removed.
2. File transfer errors will trigger automatic retries. FIT1e reports an `EVENT_TRANSFER_RX_FAIL`. If the file transfer failed on CRC checking, then the FIT1e will request the entire transfer again. If the failure is due to RF loss, the FIT1e will request the data from the last known good offset. At the point when the FIT1e ceases retrying, the FIT1e will request the next available file for download or, if no other files exist, will simply stop sending any more requests.
3. Fully compatible to Garmin FR60.

2 Identifying FIT1e Revision

Two module revision identification approaches are offered here. Each approach has its suitable cases.

2.1 Product Tracking Code

Lately released FIT1e modules have a six-character tracking code printed on the product sticker, as highlighted in the picture blow. The last character denotes the revision. The FIT1e module in the picture is at rev C.



FIT1e modules version A and B produced **before April 2011** have different product stickers and often have some hand written marks on the PCB boards, as indicated in the picture below. Version A and B are not further identifiable through the product sticker.



2.2 Firmware Version String

An ANT version command 0x3E can be issued via the serial communication to acquire the version String.

Revision	Version String
C/D	ALE1.05RAG ^{note}
B	ALE1.04RAG
A	ALE1.01RAG

Note: Version C and D are of different firmware build number which is not reflected in the version string.