

This document addresses known errata and documentation issues for the Altera® FIR Compiler, v7.1. Errata are functional defects or errors, which may cause an Altera FIR Compiler MegaCore® function to deviate from published specifications. Documentation issues include errors, unclear descriptions, or omissions from current published specifications or product documents.

Table 1 shows the issues that affect the FIR Compiler v7.1.

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For existing up-to-date errata, refer to the *FIR Compiler, v7.1 Errata Sheet* on the [Errata Sheets](#) page of the Altera literature website.

## FIR Compiler v7.1 Issues

Altera has identified the following issues that affect the FIR Compiler, v7.1.

### **coef\_in Bit Width Incorrect When Using Manual Scaling**

For a reloadable coefficient FIR filter when the Coefficients Scaling type is set to Manual, the coefficient bit width calculations are incorrect.

#### *Affected Configurations*

This issue affects all reloadable coefficient filters with manual coefficient scaling.

### *Design Impact*

The simulation model generation and Quartus II compilation fails. The incorrect bit width can be observed from the output bit width displayed in the GUI.

### *Workaround*

Avoid selecting manual coefficient scaling for reloadable coefficient filters. If you need to use manual scaling, then you can do the following:

- **If you want to load your own set of coefficients:** Scale them before you load them into the FIR Compiler. Then set the Coefficients Scaling to `None` in the main Parameterization window. You will notice that the output bit width displayed in the GUI has changed. The simulation model will also generate successfully.
- **If you want to generate the filter coefficients using the coefficient generator:** First design a filter with fixed coefficients. Set the manual scaling factor as you require, then generate this filter. The coefficient set is written to a file `<your_fir_filter>_coef_int.txt`. Restart the FIR compiler to edit your filter parameters but this time, go to the Edit Coefficient Set page, and instead of generating the coefficients, choose to import the `<your_fir_filter>_coef_int.txt` file. Load this file and change the Coefficients Scaling type to `None` in the main Parameterization window. You will notice that the output bit width displayed in the GUI has changed. The simulation model will also generate successfully.

### *Solution Status*

This issue will be fixed a future release of the FIR Compiler.

## **Reloadable Coefficient Filters Fail for Some Single Rate Interpolation and Decimation MCV Filters**

Reloadable coefficient filters fail for some single rate, interpolation and decimation multicyle variable filters.

### *Affected Configurations*

This error is observed in some of the reloadable coefficient MCV filters when the coefficients are stored in logic cells.

### *Design Impact*

The produced output does not match the expected output.

### *Workaround*

Change the coefficient storage to block memories such as M512, M4K, MLAB, or M9K.

### *Solution Status*

This issue will be fixed a future release of the FIR Compiler.

## **Error When Preloading Coefficients for HardCopy Devices**

Some FIR architectures cannot preload coefficient memories in HardCopy devices.

### *Affected Configurations*

This issue affects configurations targeting HardCopy devices.

### *Design Impact*

Some FIR architectures fail during synthesis when targeting Hardcopy devices.

### *Workaround*

Avoid using pre-initialized memory by selecting data storage and coefficient storage to LEs.

### *Solution Status*

This issue will be fixed a future release of the FIR Compiler.

## **Signed Binary Fraction Results in Output Bit Width Mismatch**

For signed binary fraction data types, some FIR filter variations fail Quartus® II compile and simulation model generation.

### *Affected Configurations*

This issue affects all configurations with signed binary fraction data types.

### *Design Impact*

Compilation fails in the Quartus II software.

### *Workaround*

This problem is related to a user interface problem. In some cases, when you reopen the variation file using IP Toolbench and re-generate the filter the problem is resolved. If it still fails compilation, use one of the other data types (Signed Binary or Unsigned Binary).

### *Solution Status*

This issue will be fixed a future release of the FIR Compiler.

## **Half-Band Decimator & Symmetric Interpolator Filters Do Not Support Unsigned Data Types**

The half-band decimator and symmetric interpolator filters do not support unsigned input data type.

### *Affected Configurations*

This issue affects half-band decimator and symmetric interpolator filter architectures.

### *Design Impact*

The FIR filter produces incorrect results.

### *Workaround*

The half-band decimator and symmetric interpolator filter architectures require signed input data types. To ensure it works with unsigned data, design the filter with input ports 1-bit larger than the original value and connect the MSB bit of the `ast_sink_data` input port to 0.

### *Solution Status*

This issue will be fixed a future release of the FIR Compiler.

## **Quartus II Simulation Vector File Not Generated**

FIR Compiler v7.1 does not create a vector file for simulation in the Quartus II software.

### *Affected Configurations*

This issue affects all configurations.

### *Design Impact*

The design can be compiled, but there is no automatically generated vector file testbench available to simulate the design in the Quartus II software.

### *Workaround*

Use NativeLink to simulate the VHDL testbench instead.

### *Solution Status*

This issue will be fixed a future release of the FIR Compiler.

## **Graphical User Interface Freezes**

When you choose a **Coefficient Width** of 2 bits and at the same time set the coefficient scaling to **Auto Power of 2**, the graphical user interface (GUI) cannot produce the function and the GUI can freeze.

### *Affected Configurations*

This issue affects FIR Compiler configurations that use the previously mentioned GUI settings.

### *Design Impact*

This issue causes the GUI to freeze.

### *Workaround*

To use a **Coefficient Width** of 2, manually scale the coefficients to the desired range using the manual coefficient scaling option instead of the **Auto Power of 2** option. Alternatively, you can perform the scaling externally and import the coefficients as text file. When importing coefficients, set the coefficient scaling option to **None**.

### *Solution Status*

This issue will be fixed in a future release of the FIR Compiler.

## GUI Freezes or Generates Incorrect Multicycle Variable Architectures

The FIR Compiler GUI can freeze or generate incorrect code if you use all of the following GUI settings:

- The multicycle variable (MCV) architecture
- A high number of coefficients
- A low number of bits per coefficient
- A high number of cycles
- Turn on coefficient reloading

### *Affected Configurations*

This issue affects FIR Compiler configurations that use the previously mentioned settings.

### *Design Impact*

This issue causes the FIR Compiler GUI to freeze or generate incorrect code.

### *Workaround*

To avoid this problem, you should instantiate separate filters such that each filter uses only a part of the coefficients. Then, combine the results of these filters.

### *Solution Status*

This issue will be fixed in a future release of the FIR Compiler.

## Contact Information

For more information, contact Altera's mySupport website at [www.altera.com/mysupport](http://www.altera.com/mysupport) and click **Create New Service Request**. Choose the **Product Related Request** form.

## Revision History

[Table 2](#) shows the revision history for the *FIR Compiler Compiler v7.1 Errata Sheet*.

Version	Date	Errata Summary
1.1	May 2007	Added errata.
1.0	May 2007	New errata sheet for the 7.1 release.



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