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Analog Devices, Inc.

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SigmaStudio Release Notes

Document Status:	Approved
Approved By:	ASH

Revision List

Table 1: Revision List

Revision	Date	Description
0.1	22.04.2016	Draft Version. Taken from previous Release notes
0.2	25.04.2016	Updated for 3.13.1Beta
0.3	28.04.2016	Updated the Limitations.
0.4	29.04.2016	SQAE, SQAL review comments are addressed
1.0	29.04.2016	Approved and baselined.
1.1	16.06.2016	Added bug fix details for the 3.13.2 Beta
1.2	31.08.2016	Added details for 3.13 Release
1.3	07.09.2016	Updated Test results to the release notes.
2.0	07.09.2016	Baselined after Review and Approval
2.1	19.11.2016	Added details for 3.14.1Beta
2.2	25.11.2016	Updated for SQAE review comments.
3.0	26.11.2016	Baselined and approved
3.1	17.12.2016	Updated for 3.14 Release.
3.2	22.12.2016	Added Known Issues.
4.0	23.12.2016	Baselined after the review and approval.
4.1	13.02.2017	Updated release notes for 3.15.1 Beta
4.2	13.02.2017	Copyright information is updated.
5.0	13.02.2017	Approved and baselined.
5.1	26.06.2017	Updated for 3.15.2 Beta Release.
5.2	28.06.2017	SQAE comments closed.
6.0	29.06.2017	Baselined after approval.
6.1	30.06.2017	Created Empty Feature list for next release.
6.2	15.09.2017	Release notes is updated for 3.15 Release
7.0	29.09.2017	Baselined
7.1	02.11.2017	3.16.1 Beta
8.0	03.11.2017	Baselined
8.1	17.11.2017	3.16.2 Alpha
8.2	20.11.2017	Resolved review comments
9.0	21.11.2017	Baselined after approval.
9.1	29.11.2017	3.16.3 Beta

10.0	01.12.2017	Baselined after approval.
10.1	08.12.2017	Updated for 3.16 Release.
10.2	21.12.2017	Closed review comments
11.0	21.12.2017	Baselined after approval for 3.16 Release
11.1	08.02.2018	Updated for 3.17 Release
11.2	09.02.2018	Closed SQAE comments
12.0	12.02.2018	Baselined after ASH approval.
12.1	16.03.2018	Updated release notes for 4.0 Release.
13.0	21.03.2018	Release Notes Baselined
13.1	24.05.2018	Updated release notes for 4.1 Release.
13.2	30.05.2018	Minor mistakes corrected,
14.0	05.06.2018	Baselined after approval.
14.1	05.06.2018	Updated features section.
15.0	05.06.2018	Baselined after approval.
15.1	05.08.2018	Updated release notes for 4.2 Release.
15.2	30.08.2018	SQAE review comments addressed.
16.0	31.08.2018	Baselined after ASH approval
16.1	17.05.2019	Updated for the 4.3.3 Beta Release.
17.0	21.05.2019	Baselined after ASH approval.
17.1	18.06.2019	Updating the release notes for 4.4 Release.
17.2	27.06.2019	Closed the review comments
18.0	02.07.2019	Baselined after ASH approval
18.1	06.11.2019	Updating the release notes for 4.5 Release
18.2	08.11.2019	Addressed review comments
19.0	08.11.2019	Baselined after ASH approval
19.1	14.12.2020	Updating the release notes for 4.6 Release
19.2	18.12.2020	Review corrections done.
20.0	18.12.2020	Baselined after approval.
20.1	24.12.2020	Release date updated.
21.0	24.12.2020	Baselined after approval.

Copyright, Disclaimer Statements

Copyright Information

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1 Introduction

The SigmaStudio graphical development tool is the programming, development, and tuning software for the SigmaDSP audio processors. Familiar audio processing blocks can be wired together as in a schematic, and the compiler generates DSP-ready code and a control surface for setting and tuning parameters.

1.1 Purpose

The SigmaStudio graphical development tool is the programming, development, and tuning software for the SigmaDSP audio processors. Familiar audio processing blocks can be wired together as in a schematic, and the compiler generates DSP-ready code and a control surface for setting and tuning parameters.

1.2 Scope

The scope of this release is to do minor feature enhancements and fix issues found in the SigmaDSP modules and various features of the SigmaStudio.

1.3 Organization of the document

Section 1 to 5 details about the content of the releases, the changes or the features which got added

Section 6 captures the installation procedure for the SigmaStudio software tool.

Section 7 captures the known issues/ problems and work arounds for the issues in the release.

2 Release Information

2.1 Release Contents

Sl. No.	Release Item	Description	Version Details
1.	ADI_SigmaStudio-Rel 4.6-x64.exe	64-bit Installer for SigmaStudio 4.6 Release	4.6 Release
2.	SigmaStudio_4.6_Release_Notes.pdf	Release notes. (Refers this document)	4.6 Release

Table 2: Release Contents

2.2 Hardware and Software Requirements

Pre-Requisite	Details
Hardware Requirements	• 256 MB of RAM (1GB recommended) • 80 MB of available hard disk space • 1024 x 768 screen resolution • USB 2.0/3.0 data port (Required for use with Evaluation hardware only)
Software Requirements	• Windows 7/ Windows 10 (x64) • Microsoft .NET Framework 4.7

Table 3: Hardware and Software Requirements

3 Supported Features

Release Number	Release Date	Features /Bug Fixes
4.6 Release	24-Dec-2020	**ADAU145x/ADAU146x:** • Invalid section growth options in Parametric EQ is removed. • Multiple issues with the CrossFade algorithm are resolved. • LPF option is removed in the down sampling/up sampling module. LPF can be done outside the modules now. • An issue with Audio Signal router modules which causing the modules not to work for some IO combinations is resolved. • An issue with the DSP calculation General second order filter which causing the boost to be wrong is resolved. • Pitch Transposer delay memory can be chosen between DM0, DM1 or PM now. • Assembler error caused in mute module when the parameter is allocated in DM0/DM1 page 2 is resolved. (ADAU146x). • Parameter write issue with the Advanced Clip module is resolved • Issues with Framework overrun monitor for ADAU146x is resolved • NxM mixer accepts gain between -128 to 127.99 now. • An issue with AutoEQ which causing the high frequencies roll off is resolved. • Assembler errors in Fractional Delay module are resolved • Export issue with the AVC modules are resolved. • Issue with the invert functionality of the crossover filter is resolved • Issue with Block framework MIPS reporting is resolved • Add algorithm option is removed form the Fractional delay • Issue with the CheckSum module when multiple ADAU145x/ADAU146x ICs are used in a single project is resolved. • Malloc and free code are optimized for code size • Issues with NxM mixer which is causing some IO option to fail are resolved. • Issues in the Schematic Version control are resolved. **ADAU170x:** • Issues with the Algorithm version history for 'Index Selectable Filter' is resolved. • Wrong parameter addresses in Multi-tap Delay are fixed. **Export** • Issues with the Type field in export XML is resolved. • Export now supports relative path from the schematic file. • Issues with Address Increment field in the export for ADAU1761 is resolved. • Issues with the data length field of the Sequence Window export are resolved.

		User Interface: • Issues in Standard RMS compressor GUI is resolved. • UI issue with the Nth Order filter module which causing the coefficients to change is resolved. • An issue with 'Resize View' option which causing the module labels to become empty is resolved. • Issues with the timestamp field in the capture window are resolved. • Issues with Holders EQ/ High order shelving filters which causing the SigmaStudio project file not to open in some cases resolved. • Issues with the Level detector which causing the update not to happen in some cases are resolved. • Module labels are maintained unique when hierarchy boards are copied and pasted within the schematic. • Scrollbars are now visible in the AD193x codec configurations. **Scripting:** • Indirect Parameter table values can be written from the scripting now. • Load and design filters options in AutoEQ modules can be done through script now. • Writing the self-boot image of ADAU145x/ADAU146x schematic can be done using script now.

Table 4: Supported Features

Please refer 'Release Information' section of SigmaStudio wiki page for details on the previous releases.

4 Package Details

Installation Path (C:\Program Files\Analog Devices\SigmaStudio 4.6)

+---**Docs**
| **2020-08-13-SS Click Thru SLA.pdf** - License Agreement
| **ADAU1787 UpdatesLog.pdf** – Updates on ADAU1787 IC.
+---**Help**
| **SigmaStudioHelp.chm** - SigmaStudio help document
|
|---**USB drivers** – USB drivers required for USBi connectivity to SigmaStudio
|---**Setup** – Driver setup files.
| **SStudio.exe** – SigmaStudio Executable Application
| **uninstall.exe** – Uninstaller for SigmaStudio Software
| Other DLLs and support files used by the SigmaStudio tool.

Documents Folder (Users Documents Folder)

+--- Sample Schematics – Sample schematics for SigmaStudio
+--- Speaker Measurement Samples – Speaker measurement sample files

5 Package Installation

To install SigmaStudio™ 4.6 or higher versions

1. Quit any applications you are running.
2. Delete any files in AppData (%APPDATA%/Analog Devices/SigmaStudio 4.6) before installation.
3. Double-click on the SigmaStudio 4.6 installer, “ADI_SigmaStudio-Rel 4.6-x64.exe”, to start the installation.
4. Review the contents of the license agreement, if you agree click “I Agree”.
5. SigmaStudio 4.6 may be installed alongside or over an existing copy of SigmaStudio, Select an existing installation directory if you wish to overwrite a previous SigmaStudio version.
6. If you are installing SigmaStudio for the first time, restart your computer when the installation is complete.

Notes:

1. The user must be an administrator when installing SigmaStudio.
2. When installing SigmaStudio 4.6 first time on Windows 7 PC, installation of .NET 4.7 Framework might show up the following error. Follow the steps provided in the Microsoft Support page, if you face this error.

6 Performance Figures

MIPS and memory usage for each of the algorithms in the schematic can be found in the Output window of SigmaStudio.

7 Known Issues & Workarounds

7.1 Limitations

1. When the schematic is zoomed in or zoomed out, the controls in the schematic cannot be updated.

7.2 Known Problems

This section lists know problems which shall be fixed in the upcoming releases.

1. Undo operation does not work with ‘User Comment’ and ‘User Image’ modules.
2. ADAU145x Flash Programmer will not work as expected if the ‘Verify Target Memory’ is not done after a write.
3. Block Schematic tab is not visible sometimes when multiple ICs are added in the Hardware Configuration tab.

7.3 Work Arounds

1. ‘Reset Zoom’ before updating any controls/parameters.
2. Close and reopen the schematic if the ‘Flash Programmer’ for ADAU145x is not working as expected.

7.4 Notes

1. Delete any files in AppData (%APPDATA%/Analog Devices/SigmaStudio 4.6) before SigmaStudio installation.

8 Technical Support

8.1 Contact information

Any bug in SigmaStudio, can be reported on the Analog Devices EngineerZone forum for SigmaDSP. Description shall include the steps to reproduce the bug, implication, the version of SigmaStudio, and include any error messages from SigmaStudio.

Additional features or enhancements required for SigmaStudio can be submitted on the Analog Devices EngineerZone forum for SigmaDSP.

8.2 Type of support

All technical queries, bug reporting, issues and feedbacks posted in the engineering zone shall be processed and responded accordingly based on the nature of the support required.

9 APPENDIX A: Quick Setup Guide

SigmaStudio wiki page in www.analog.com provides instruction on SigmaStudio Tool usage.

Terminology

Table 5: Terminology

Term	Description
API	Application Programming Interface
GUI	Graphical User Interface
EQ	Equalizer
MB	Mega Bytes
GB	Giga Bytes
USB	Universal Serial Bus
USBi	USB Interface
DLL	Dynamic Link Library
DSP	Digital Signal Processor
SPI	Serial Peripheral Interface
GPIO	General Purpose Input Output
FIR	Finite Impulse Response
FFT	Fast Fourier Transform
RMS	Root Mean Square
RAM	Random Access Memory
DM	Data Memory
PM	Program Memory
DC	Direct Current
dB	decibel

References

Table 6: References

Reference No.	Description