



Gowin RiscV_AE350_SOC SDK

Release Note

MRN1033-1.3E, 03/21/2025

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Revision History

Date	Version	Description
10/31/2023	1.0E	Initial version published.
01/26/2024	1.1E	● Port signals DDR3_CS_N, DDR3_RSTN, POR_RSTN and HW_RSTN added. ● DK-START-GW5AT138K V2.1 and Tang-MEGA-138K-Pro-Dock development board reference designs added. ● Extended_AHB2AHBBridge and Extended_Memory (BlockRAM) solutions updated; Extended_Memory (DDR3), Extended_AHB_CAN, and Extended_AHB_Ethernet solutions added. ● NN software library programming and its software programming reference design supported. ● RTOS RT-Thread standard version and its software development kit supported. ● Ethernet TCP/IP stack and its software programming reference design supported. ● FreeRTOS software programming reference design updated; DDR3 Memory and Ethernet software programming reference designs added.
03/21/2025	1.3E	● DDR3 Memory Controller updated. ● More TCP/IP protocol stack example reference designs supported. ● More AXI4 bus example reference designs supported. ● Tflite_Micro and its example reference design supported. ● Real-time processing example reference design using Local Memory supported. ● TinyYOLO v3 example reference design supported. ● RDS software version updated.

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1 About This Release

This release includes Gowin RiscV_AE350_SOC V1.3 software development kit:

- DDR3 Memory Controller updated.
- More TCP/IP protocol stack example reference designs supported.
- More AXI4 bus example reference designs supported.
- Tflite_Micro and its example reference design supported.
- Real-time processing example reference design using Local Memory supported.
- TinyYOLO v3 example reference design supported.
- RDS software version updated.

RiscV_AE350_SOC V1.3 SDK is available for download at Gowin Semiconductor website, and you can click this link [RiscV_AE350_SOC V1.3.zip](#).

The parameter configuration for the RiscV_AE350_SOC software and hardware reference designs has been completed. Use it in the RDS software (tested software version: V1.3) and Gowin Software (tested software version: V1.9.11.01 (64-bit)).

2 Feature and Enhancement Summary

Function	Description
FPGA Software Tool	Tested software version: Gowin_V1.9.11.01 (64-bit)
MCU Software Tool	Tested software version: RiscV_AE350_SOC_RDS_V1.3_win
New functions	● DDR3 Memory Controller updated. ● More TCP/IP protocol stack example reference designs supported. ● More AXI4 bus example reference designs supported. ● Tflite_Micro and its example reference design supported. ● Real-time processing example reference design using Local Memory supported. ● TinyYOLO v3 example reference design supported. ● RDS software version updated.
Enhancements	—

3 Platform Supported

The supported platforms for the RiscV_AE350_SOC SDK include:

Windows	Windows 7/10/11 (64-bit)
Linux	Ubuntu 20.04 LTS

4 Documentation

The released manuals are listed in the table below. You can download the manuals at Gowin website or read online.

Documents	
MUG1031, Gowin RiscV_AE350_SOC Hardware Design Manual	Online, PDF
MUG1029, Gowin RiscV_AE350_SOC Software Programming Manual	Online, PDF
MUG1030, Gowin RiscV_AE350_SOC Quick Start Manual	Online, PDF
MUG1032, Gowin RiscV_AE350_SOC DSP Software Programming Manual	Online, PDF
MUG1181, Gowin RiscV_AE350_SOC NN Software Programming Manual	Online, PDF
MRN1033, Gowin RiscV_AE350_SOC SDK Release Note	Online, PDF

5 Support and Feedback

Gowin Semiconductor provides customers with comprehensive technical support. If you have any questions, comments, or suggestions, please feel free to contact us directly using the information provided below.

Website: www.gowinsemi.com

E-mail: support@gowinsemi.com

