



Gowin NPU IP

Release Note

RN800-1.0E, 08/17/2022

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Revision History

Date	Version	Description
08/17/2022	1.0E	Initial version published.

Contents

Contents	i
1 About This Release	1
2 Function and Enhancement Summary.....	2
3 Platform Supported	3
4 Documents	4
5 IP Support.....	5

1 About This Release

This release includes Gowin NPU (Neural-network Processing Unit) IP reference design and user guide. Gowin NPU IP reference design includes hardware reference design and software reference design, and they are available at Gowin website.

Hardware reference design can be used for the overall synthesis, placement and routing after simulation and instantiation adding user design.

Software reference design can be used for the overall compilation and linking after adding user software design.

2 Function and Enhancement Summary

Gowin NPU IP functions and enhancement items are as follows:

Table 1 Gowin NPU IP Overview

Function	Description
FPGA Software: Gowin_V1.9.8.07 Education	
MCU Software: GMD_V1.1	
AI Software: GoAI2.0_SDK MJB_V1.0.0	
IP Function	● AHB Bridge Unit ● Accelerator Unit: DepthwiseConv2D, Conv2D, MaxPool2D, AveragePool2D ● PSRAM Controller Unit ● SPI Flash Controller Unit
IP Design Language	Verilog (encrypted)
Reference Design Language	● Verilog ● C ● Python
IP Enhancement	● Work with MCU through AHB bridge ● Invoke machine learning algorithms to accelerate the parallel computing of AI models
Devices Supported	GW2AR-18C QN88P

3 Platform Supported

The corresponding software platforms are as follows:

Table 2 Software Platforms

Windows	Windows 7/10 (32 bits/64 bits)
Linux	Centos 6.8/7.0/7.5 (64-bit) Ubuntu 18.04/20.04 LTS
macOS	macOS 11.2.3

4 Documents

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

Table 3 Documents List

Documents	Description
IPUG800, Gowin NPU IP User Guide	Online, PDF
RN800, Gowin NPU IP Release Note	Online, PDF

5 IP Support

Gowin Semiconductor provides customers with comprehensive technical support. If you have any questions, comments, or suggestions, please feel free to contact us directly by the following ways.

Website: www.gowinsemi.com

E-mail: support@gowinsemi.com

