



Gowin Software

Release Note

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1 About This Release

The V1.9.12.01 release includes features and enhancement functions of Gowin Software. GOWINSEMI recommends downloading this version to get the latest software.

The following table summarizes the release items:

Feature	Description
Gowin Software: V1.9.12.01	
PN Supported	● GW1AN-1S Version A - GW1AN-LV1SCS30C6/I5 ● GW1A-1 Version C - GW1A-LV1QN48C6/I5 ● GW1AN-1 Version C - GW1AN-LV1QN48C6/I5 ● GW1N-2 Version B - GW1N-LV2MG49C6/I5 - GW1N-UV2MG49C6/I5 - GW1N-LV2MG49C7/I6 - GW1N-UV2MG49C7/I6 ● GW5ART-15 Version A - GW5ART-LV15CS126PHC2/I1 - GW5ART-LV15CS126PHC1/I0 ● GW5ART-15 Version B - GW5ART-LV15CS126PHC2/I1 - GW5ART-LV15CS126PHC1/I0
Device Removed	● GW1N-1 ● GW1N-1S
New Functions	● Added IP cores: GoRV32_FP, GoRV32_Nano, PCIe SGDMA. ● Added incremental/decremental data filling to the mi/fi editor. ● Added a CSR path configuration option to the GUI for the GW5AT-75 devices. ● Added new configuration options "Default Mode" and "BSRAM Partial Print Mode" on the "Configuration > Bitstream > General" page.

Feature	Description
	● Added a new configuration option "Co-Place IO Registers" on the "Configuration > Place & Route > Place" page. ● Added timing analysis support for combinational logic ports of MIPI_DPHY and MIPI_CPHY on Arora V devices. ● Added ALP ports to the MIPI_CPHY primitive. ● Added support for the Threshold Offset of MLVDS25 on GW5A(S)-25, GW5A(T)-60, and GW5A(R)T-15 devices. ● Updated Gowin License Server to support configuring the user hostname for floating licenses. ● Added SSPI external Flash operation options to the Programmer: "Slave SPI Bulk Erase exFlash", "Slave SPI Erase, Program exFlash", "Slave SPI Erase, Program and Verify exFlash". ● Added support for downloading .binx files in the Programmer.
Updated	● Updated IP cores: Gowin_GoRV32_Pro, APB SD Host, SDI Encoder, SDI Decoder, PDM2PCM, 2.5G Serial Ethernet, SerDes RoraLink 64B66B, DDR Memory Interface, EDP Encoder, EDP Decoder, DDR3 Memory Interface, DVI RX, and Triple Speed Ethernet MAC, Basic FIR. ● GW5AT-138C and GW5AST-138C devices support CAN IP. ● Added a comment line //IP Version to the ip and ip_tmp files generated by IP cores to record IP version information. ● Added support for asymmetric RAM in SDP/DP modes in IP cores for the GW1N(R)-9C devices. ● MIPI_DPHY supports a user-defined PLL configuration option "External PLL". ● For GW1N-2 and GW1N-1P5 devices, placement of FFs and latches with reset/set functions in CLS3 location is prohibited. ● The MIPI buffer supports independent configuration of the PULL_MODE attribute for the A and B pins. For differential buffers and MIPI buffers, if the PULL_MODE_B attribute is not separately configured for the B pin, it defaults to the same setting as the A pin. ● For GW5A(R)(S)-25, GW5A(T)-60, and GW5A(R)T-15 devices, when the BANK VCCIO of MIPI_OBUF is set to 2.5 V/3.3 V, the software issues a warning indicating that RX does not operate in LP mode under these voltage conditions. ● For GW5A(R)(S)-25 and GW5A(S)(T)-138/75 devices, the left and right banks support MIPI_IBUF and the DIFF_RESISTOR setting. The software issues a warning indicating that when MIPI_IBUF is placed in the left or right bank with DIFF_RESISTOR set to ON, the MIPI RX performance may be degraded. ● Updated delay data for LVDS IO Buffers on GW1N and GW2A devices. ● Updated PCLK delay data for GW1N devices. ● Updated I/O Buffer delay data for GW5A(S)-25 and GW5A(T)-60 devices. ● Updated delay data for cross-BSRAM/DSP X-wires on

Feature	Description
	GW5A series devices. ● Added IBIS models supporting LVCMOS12 with 2 mA and 6 mA drive strengths for GW1N series devices. ● Optimized the QE configuration process for external Flash and added support for ISSI Flash devices in the Programmer. ● Optimized the "SRAM Program and Verify" operation in the Programmer, improving the readback verification process. ● Optimized the "SRAM Program" operation in the Programmer. For GW5A(S)(T)-138 and GW5AT-75 devices, when the bitstream file is set to "Quad" mode and "BSRAM Partial Print Mode" is enabled to print BSRAM initial values, direct SRAM configuration is not supported.

2 Platform Supported

The software is supported on the platforms listed below.

Windows	Windows 7/8/10/11 (64-bit)
Linux	Centos 7.0/7.3/7.5/8.2/9 (64-bit) Ubuntu 18.04/20.04/22.04/24.04/24.10 LTS
macOS	Sonoma 14.4/14.6.1 (M2) Ventura 13.6 (M2) Sequoia 15.2 (M4) Sequoia 15.3 (M2)

Note!

- Apple's official signing and notarization process of the current macOS dmg package has not yet completed, and users may encounter system security prompts during installation.
- When running Gowin Software on a Linux system, you need to set the environment variable LD_LIBRARY_PATH first, such as export LD_LIBRARY_PATH=/Gowin_V1.9.12.01/IDE/lib
- If you need Gowin Software V1.9.12.01(32-bit) in Windows or CentOS 6 (64-bit), please contact GOWIN Support.

3 Memory Requirements

The table below lists the minimum and recommended memory requirements for Gowin Software to support GOWIN devices. It is recommended to use a 64-bit operating system when running Arora V devices on the Windows platform.

Device	Minimum	Recommended
GW5A(S)(T)-138/75	3GB	5GB
GW5A(T)-60	3GB	5GB
GW2A(N)-55	2GB	2.5GB
GW5A(S)(R)-25	2GB	4GB
GW3A-20	2GB	4GB
GW2A(N)(R)-18	1GB	1.5GB
GW5A(R)T-15	1GB	1.5GB
GW1N(R)-9	512MB	1GB
GW1AN-5	256MB	1GB
GW1N(S)(E)(R)(F)-4	256MB	1GB
GW1N(Z)(R)-2	128MB	1GB
GW1(A)(N)(Z)(R)-1	128MB	1GB

4 Ports

Port No.	Port Type	Port Description
36546	Fixed Protocol Port	Used for Gowin Analyzer Oscilloscope (GAO) display communicating with JTAG server
36547	Fixed Protocol Port	Used for Gowin Analyzer Oscilloscope (GAO) display communicating with JTAG server
36548	Custom Protocol Port	Used for Gowin Programmer communicating with JTAG server
10559	Custom Protocol Port	The license server port for Gowin Software
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5 Documents

The released documents are listed in the table below and the PDF versions are packaged in the installation directory.

Documents	Description
SUG501, Gowin Software Quick Installation User Guide	PDF
SUG918, Gowin Software Quick Start Guide	PDF
SUG100, Gowin Software User Guide	PDF
SUG940, Gowin Design Timing Constraints User Guide	PDF
SUG114, Gowin Analyzer Oscilloscope User Guide	PDF
SUG282, Gowin Power Analyzer User Guide	PDF
SUG283, Gowin Primitive User Guide	PDF
SUG550, GowinSynthesis User Guide	PDF
SUG935, Gowin Design Physical Constraints User Guide	PDF
SUG502, Gowin Programmer User Guide	PDF
SUG937, Gowin Software User Messages Reference	Online help, PDF
SUG755, Gowin HDL Schematic Viewer User Guide	PDF
SUG949, Gowin HDL Coding User Guide	PDF
UG287, Gowin DSP User Guide	PDF
UG285, Gowin BSRAM & SSRAM User Guide	PDF
UG286, Gowin Clock User Guide	PDF
UG288, Gowin Configurable Function Unit (CFU) User Guide	PDF
UG289, Gowin Programmable IO (GPIO) User Guide	PDF
UG295, Gowin User Flash User Guide	PDF
SUG1018, Arora V Design Physical Constraints User Guide	PDF
UG300, Arora V BSRAM & SSRAM User Guide.	PDF
UG303, Arora V Configurable Function Unit (CFU) User Guide	PDF
UG304, Arora V Programmable IO (GPIO) User Guide	PDF
UG305, Arora V Digital Signal Processing (DSP) User Guide	PDF
UG306, Arora V Clock User Guide	PDF

Documents	Description
SUG1189, Gowin Virtual Input Output User Guide	PDF
SUG1220, Gowin Software Tcl Commands User Guide	PDF

6 Known Problems and Solutions

The following problems apply to the supported functions in Gowin Software.

1. **If Smart App Control is enabled on Windows 11 system, the software may be blocked, resulting in installation failure.**

Solution: Disable Smart App Control and then try installing the software again.

2. **Failure to generate SSCPLL and SerDes IP on Windows 7 system**

Solution: Update the Windows operating system to Windows 8 or above.

3. **GAO Capture Signal Failure**

Solution: Try to reduce the number of capture signals and capture depth. If the problem still exists, please contact GOWIN support.

4. **GAO PnR Failure**

ERROR (PR1011): Failed to capture GAO signal<name>, because there is no wire to route for the signal.

Solution: Check whether the signal is hard-wired, such as the output of IOLOGIC.

5. **The information output pane displays messy code on Ubuntu 18.04 LTS system**

The information output pane displays messy code in Linux; when the content is copied and pasted to the code editing pane, the display is normal.

Solution: Delete ide/lib/libfreetype.so.6, and make the software use the library that comes with the user's computer system.

6. When simulating vho, the simulator reports an error: Failed to find INSTANCE 'GSR'

It is due to the fact that VHDL language does not support the duplication of names for primitives and their instantiations.

Solution: Modify the instantiation name of the primitive GSR in both the vho and .sdf files to "GSR_ins".

7. For GW1N(R)-9 Version C devices, GowinSynthesis has an inequivalence known issue in inference of asymmetric RAM for SDP.

Solution: Add the synthesis attribute synthesis syn_ramstyle=registers or synthesis syn_ramstyle=distributed_ram to implement asymmetric RAM using logic, though this will increase logic resource utilization.

8. When programming GW5AT-LV138FPG676A, GW5AT-LV138PG676A, GW5AT-LV138PG484A samples, ID Code mismatch is prompted.

Solution: When creating a new project, you need to select the corresponding GW5AST-138 Version B PN to generate the bitstream file, and select the GW5AST-138 Version B device in the Programmer.

