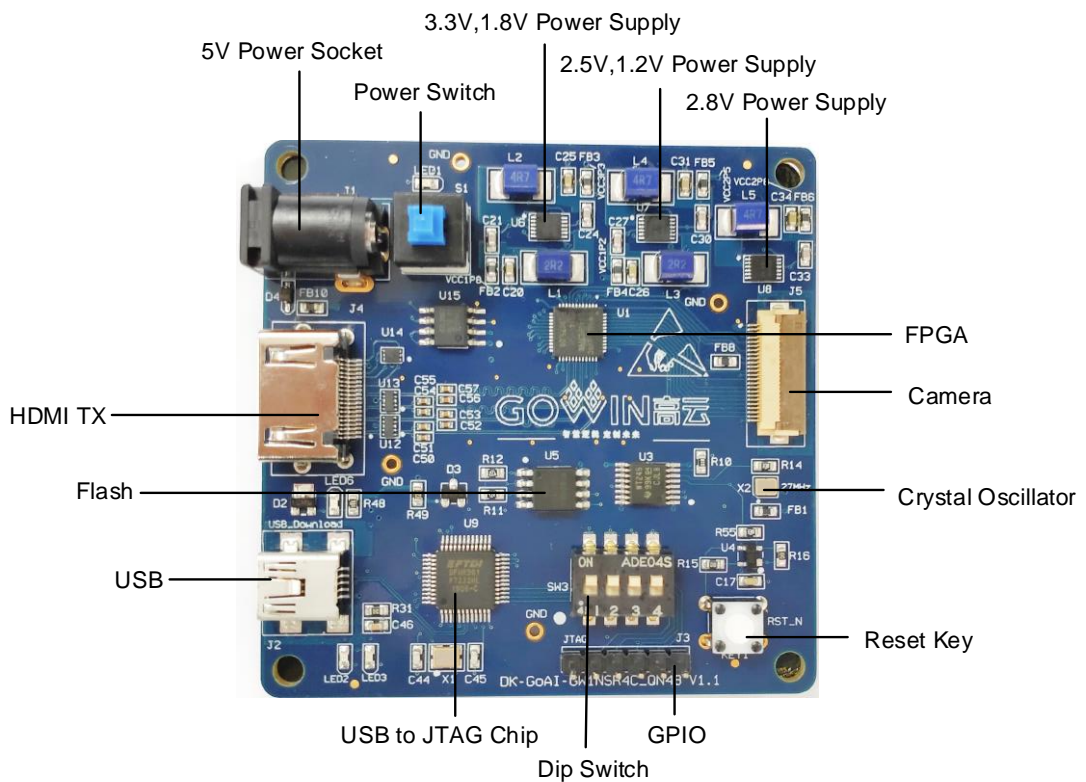


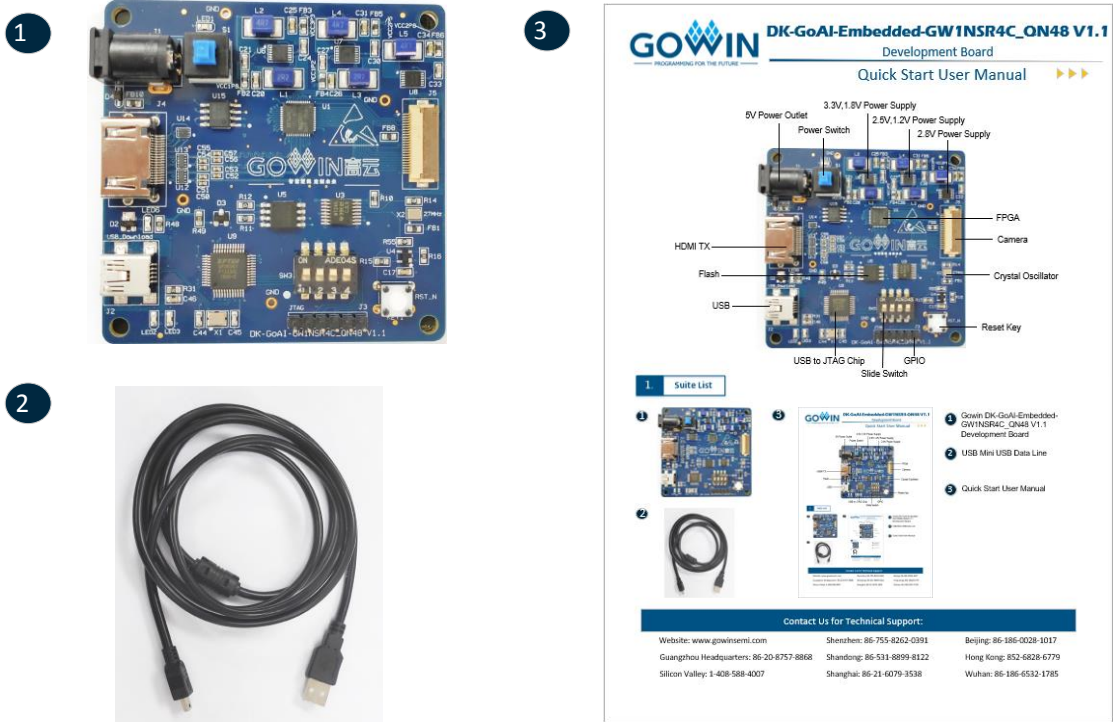
# DK-GoAI-GW1NSR4C\_V1.1 Development Board Quick Start Guide

Figure 1 PCB Components



# Kit List

Figure 2 Development Board Kit



## Contact Us for Technical Support:

- Website: [www.gowinsemi.com/en](http://www.gowinsemi.com/en)      Shenzhen: 86-755-8262-0391      Beijing: +86-186-0028-1017
- Guangzhou Headquarters: 86-20-8757-8868      Shandong: 86-531-8899-8122      Hong Kong: 852-6828-6779
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- ① Gowin DK-GoAI-GW1NSR4C\_V1.1 Development Board
- ② USB Cable
- ③ Quick Start Guide

## Introduction

Thank you very much for taking DK-GoAI-GW1NSR4C V1.1 as the development & learning platform. This guide can help you install the required software, compile the Demo, and download it to the development board to test so as to be familiar with the development flow.

## Install Software

Install Gowin EDA software (Gowin Software) to create, build and download FPGA Demo program. Download the EDA software, apply for a license, and obtain software user guide at GOWINSEMI website: <https://www.gowinsemi.com/en/support/home/>. For details on the software

installation method and application, please see [SUG100](#), Gowin Software User Guide.

## Development Board Power-on Test

The test program has been downloaded into the internal FLASH before the delivery of DK-GoAI-GW1NSR4C\_V1.1 development board. The development board can be checked whether to work when it is powered on.

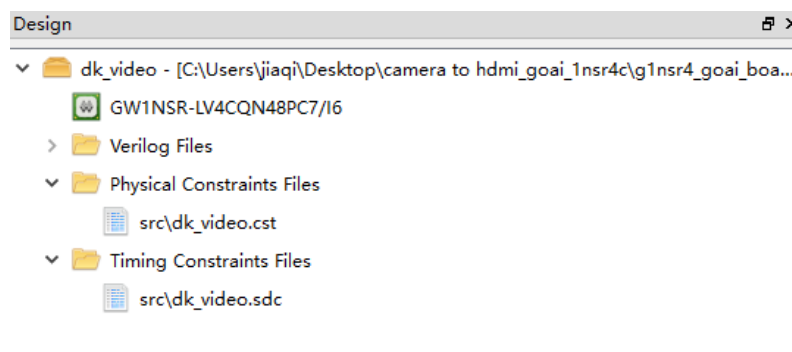
Connect the J2 (USB interface) of the development board to PC using the USB cable. If the loading is successful, the green LED2 flashes, the green LED3 is constantly on and the screen displays the image acquired by camera, it indicates that the board can work.

## Build Demo Program

The test program is that the camera collects the image and HDMI outputs this image. You can download the corresponding demo at Gowinsemi website: <https://www.gowinsemi.com/en/support/database/>. Save the project in the directory with no Chinese characters. Open and build this demo using Gowin software.

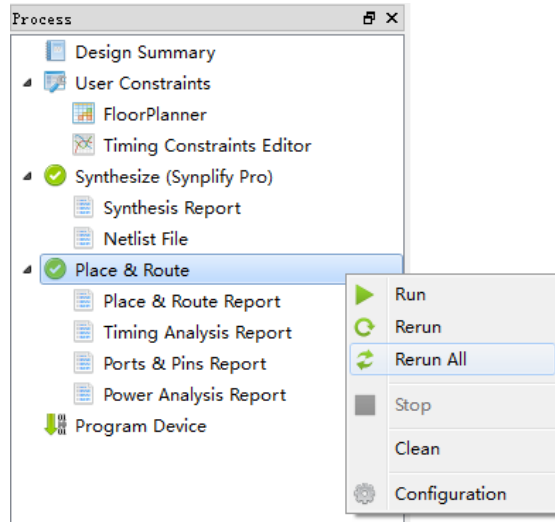
1. Open the "dk\_video.gprj" project and the follows are displayed in the "Design" window:
  - GW1NSR-LV4CQN48PC7/I6: Gowin FPGA device part number;
  - Verilog Files: Verilog files;
  - dk\_video.cst: Physical constraints file;
  - Dk\_video.sdc: Timing constraints file.

Figure 3 Design Window



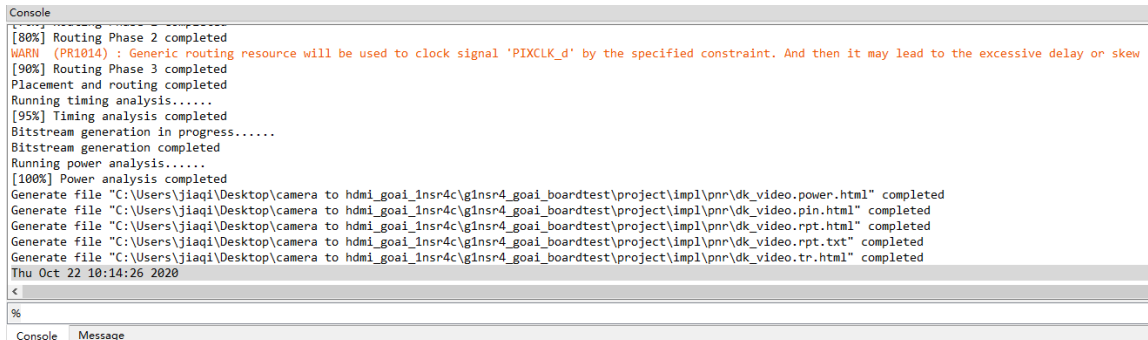
2. Right click "Place & Route" in the "Process" window and select "Rerun All";

**Figure 4 Select Rerun All**



3. After building, the following information will be displayed. The generated bitstream file is saved in: `..camera to hdmi_goai_1nsr4c\project\impl\pnr\ dk_video.fs.`

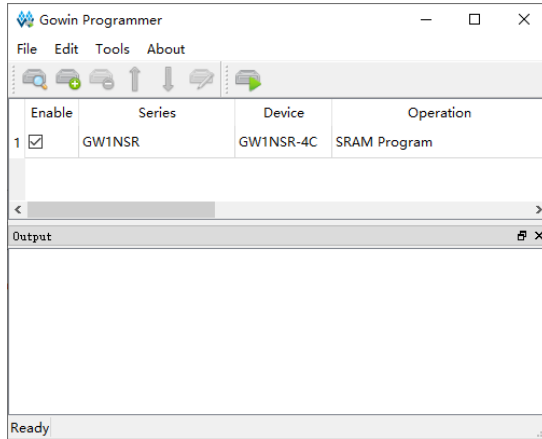
**Figure 5 Compiling Completed**



## Download and Run

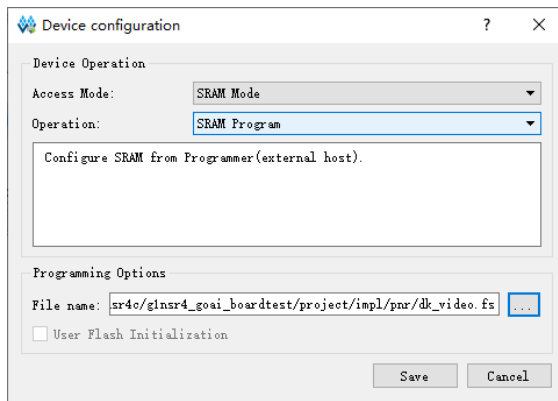
1. Connect the JTAG(J2) on the development board with PC using the USB cable. Double-click on the "Program Device" in the "Process" window. The "Programmer" window will pop up. Right-click on the device list, and select "Configure Device". The Device configuration dialog box will pop up.

**Figure 6 Programmer Window**



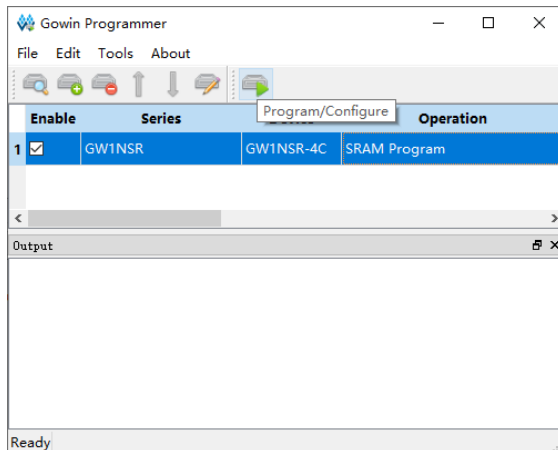
2. Set the download mode as shown below and specify the bitstream file path.

**Figure 7 Device Configuration**



3. If the loading is successful, the green LED2 flashes, the green LED3 is constantly on and the screen displays the image acquired by camera, it indicates that the board can work.

**Figure 8 Program/Configure**

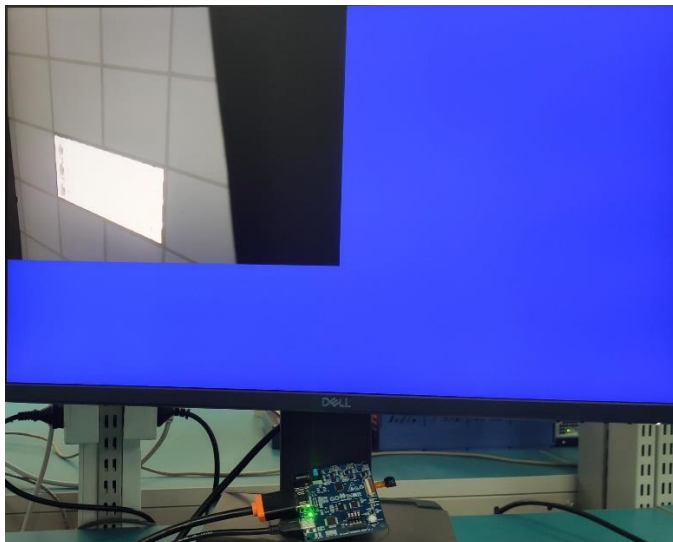


## Demo

Figure 9 Connection



Figure 10 Program the Device



## 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 by the following ways.

Website: [www.gowinsemi.com](http://www.gowinsemi.com)

E-mail: [support@gowinsemi.com](mailto:support@gowinsemi.com)

## Revision History

Date	Version	Description
10/26/2020	1.0E	Initial version published.

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