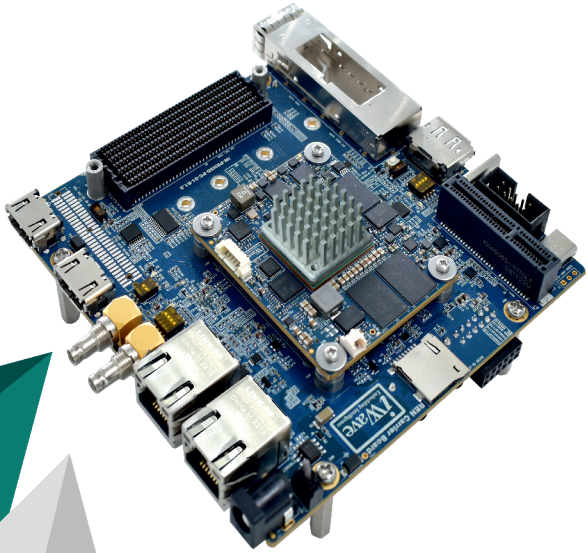
iWave

Embedding Intelligence

Versal AI Edge/Prime SOM Development Platform



iW-RainboW-G57D Quick Start Guide

iWave
Embedding Intelligence

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Certification

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Introduction

Quick Start Guide (QSG)

This Quick Start Guide (QSG) is designed for users to quickly understand the iW-RainboW-G57D-Versal AI Edge/Prime SOM Development Platform and start the evaluation. It provides the instructions for setting-up the Development Platform from the packed box.

Development Platform Description

The iW-RainboW-G57D Versal AI Edge/Prime SOM Development platform incorporates with iWave's Versal AI Edge/Prime based SOM and REN carrier board with all necessary interface connectors for developing an embedded application based on Xilinx Versal AI Edge/Prime.

Some Key Features of the Board Include:

- Versal AI Edge/Prime SOC with 328,720 Logic Cells
- 4GB LPDDR4 Memory
- 16GB eMMC Flash
- 256MB QSPI Flash
- Micro SD Port
- Dual Gigabit Ethernet Rj45 Magjack
- USB 2.0 Type-C Connector
- Debug/JTAG USB Type-C Connector
- HDMI IN & OUT Port
- SDI Video In and Video Out Connector
- FMC+ HSPC Connector
- 12 Pin PMOD Connector
- 60 Pin GPIO Header

Safety

Environmental Compliance

iW-RainboW-G57D-Versal AI Edge/Prime SOM Development Platform is designed by using RoHS and REACH compliant components and manufactured on lead free production process.

ESD Protection

This development platform is ESD sensitive. Handle the product only in accordance with the installation instructions given in the manual. Therefore ESD precautions should be taken care during transport and handling.

Must use a ESD ground strap or other grounded source before unpacking or handling the hardware.

Product Disposal

Check the local regulations for disposal of electronic products before disposing.

Quick Start Steps

Step 1 - Unpacking

Remove the Development platform from anti-static cover and place it above the ESD free area. Use anti-static pad/mat with proper grounding to place the Development Platform. Don't touch inside surface of the circuit board.

Avoid using board in extreme dust, humidity and temperature conditions. Also this development platform is not water proof. Keep away from wet surface.

Package Box

Step 2 - What's Inside The Box ?

Make sure that, below deliverables are received without any physical damage.

Development Platform

12V,5A Power Supply

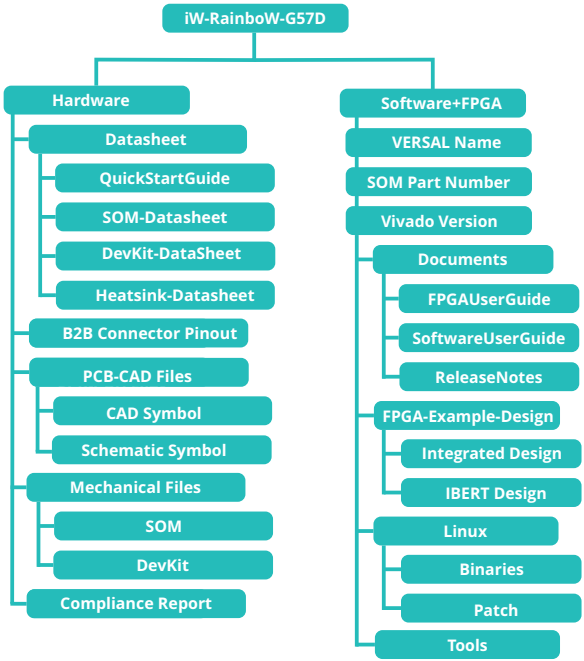
USB OTG Cable

QSG

Step 3 - Download FTP Contents

All the technical resources of iW-RainboW-G57D Versal AI Edge/Prime SOM Development platform is available in iWave FTP server.

FTP Folder Structure



For FTP Credentials, Contact ***: mktg@iwavesystems.com***

Step 4 - Read Documents

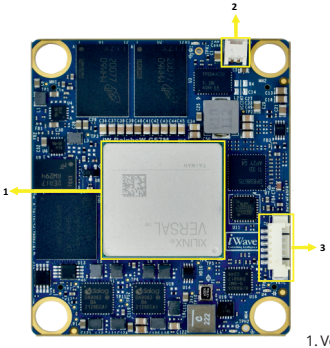
Before moving to next step, one must go through all the documents including Hardware User Guides and get familiar about iW-RainboW-G57D Versal AI Edge/Prime SOM Development platform.

Development Platform Documents:

- Quick Start Guide (This document)
- SOM Datasheet
- DevKit Datasheet
- Release Notes
- Software User Guide
- FPGA User Guide

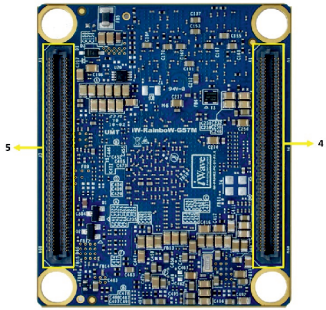
Step 5 -Quick View-SOM

TOP View



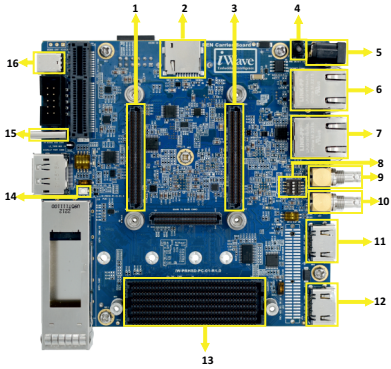
1. Versal AI Edge/Prime SoC
2. 5V FAN Header
3. PMIC Programing Header
4. Board to Board connector 1
5. Board to Board connector 2

BOTTOM View



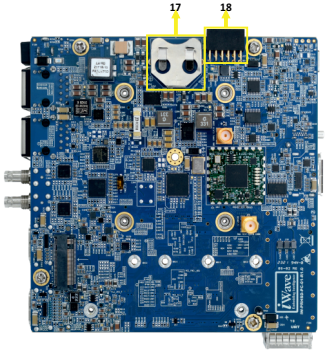
Step 6 - Quick View-Carrier Board

TOP View



01. Board to Board Connector 1
02. Micro SD Connector
03. Board to Board Connector 2
04. Power ON/OFF Switch
05. Power IN Connector
06. GEM0 Ethernet MagJack
07. GEM1 Ethernet MagJack
08. Boot Mode Switch
09. SDI Video OUT
10. SDO Video IN
11. HDMI OUT Connector
12. HDMI IN Connector
13. FMC+ HSPC Connector
14. Reset Button
15. Type-C Debug/JTAG Connector
16. USB2.0 OTG Port
17. RTC Battery Holder
18. PMOD Connector

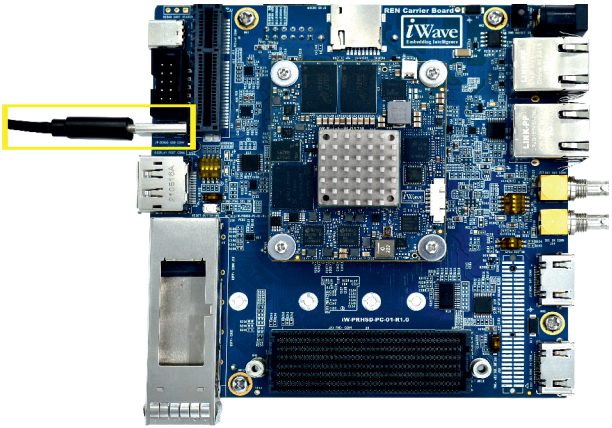
BOTTOM View



Note : *Connectors which are not highlighted is not supported by the Versal AI Edge/Prime Development Kit*

Step 8 - Debug Port Setting

Connect TypeA end of USB cable to PC and Type-C end of USB cable to Development platform's Debug USB Type-C Port (J8) as shown below.



Install the driver for Debug Port in Host PC/Laptop using the below link.

https://ftdichip.com/products/ft232rq/

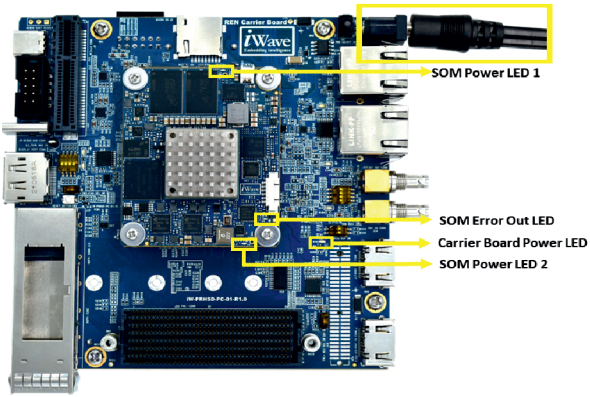
Setup the Debug Terminal parameters.

- Baud Rate : 115200
- Data bits : 8
- Parity : None
- Stop Bits : 1
- Flow Control : None

Step 8 - Power-ON the Development Platform

Connect the 12V power supply plug to the power connector (J2) of the Development platform as shown below and switch ON the power supply.

Once power is applied to the Development platform, the power LEDs in Versal AI Edge/Prime SOM and Ultra High Speed Carrier Board will glow as shown in the below image.



Warning :

1. Do not try to connect any other power supply other than supplied along with the Development platform.

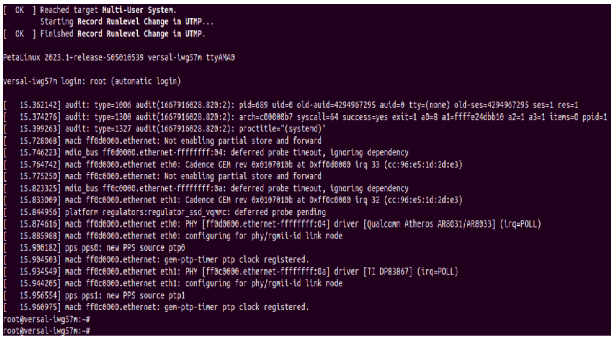
2. Do not plug or remove the Versal AI Edge/Prime SOM from carrier board with live power.

3. Contact iWave if any LEDs are not glowing or SOM Error Out LEDs glowing.

Step 9 - Test Environment setup

Once power is applied to the Development Platform as explained in the previous section, boot messages being displayed in the debug terminal of the PC/Laptop which is connected to the Development platform. Press any key in terminal immediately to see the command prompt of the Boot loader or wait until OS boots.

After OS boots, Login prompt being displayed in the debug terminal.



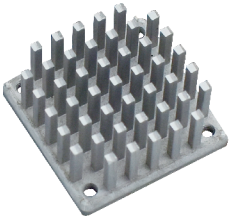
Debug Terminal

Heat Sink

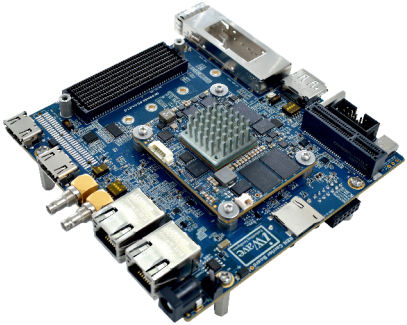
Heat Sink Integration

iW-RainboW-G57D Versal AI Edge/Prime SOM Development platform comes with Heat Sink mounted on SOM. Makesure to power up the platform only with Heatsink attached.

Below is the Heatsink integration procedure for reference.



Heatsink

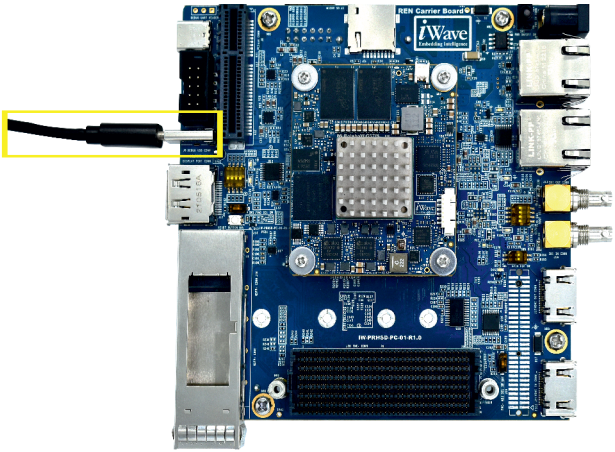


Fix the heatsink in to SOM

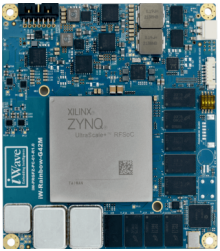
JTAG Connection

iW-RainboW-57D Versal AI Edge/Prime SOM Development Platform Support Single Type-C Connector (J8) for both JTAG programing and Debugging.

Example JTAG Programming through Type-C Cable which is tested with this Platform is mentioned below.

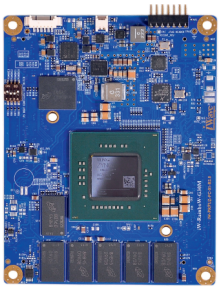


iWave's Other Products



Product Name: Zynq UltraScale+ RFSoC (ZU49/ZU39/ZU29DR)

Processor: Xilinx's Zynq US+ RFSoC
RAM: 8GB PS DDR4*
8GB PL DDR4*
Application: 5G and LTE Wireless, Satelite Communication, Aerospace & Defence



Product Name: Zynq US+ MPSoC (4/5/7-EV/EG/CG) SOM
Processor: Xilinx's Zynq US+ MPSoC (4/5/7-EV/EG/CG)
RAM: 4GB PS DDR4*
1GB PL DDR4*
Application: Industrial Motor Control & IoT, Sensor Fusion, ADAS/Embedded Vision, Data Center, Medical Endoscopy

Product Name: Zynq US+ MPSoC (11/17/19-EG) SOM
Processor: Xilinx's Zynq US+ MPSoC (11/17/19-EG)
RAM: 4GB PS DDR4*
4GB Dual PL DDR4*
Application: Video Surveillance, Cloud Computing, Artificial Intelligence/Machine Learning, 5G Wireless, High Precision Test Instrument.

**** RAM size is expandable. Contact iWave team for further details***

Need More Help ?

iWave Systems Provides Technical Support to all Customers Worldwide.

■Email

Write your technical queries to ***support.ip@iwavesystems.com***

■Live Chat

We provide Live Chat technical support to our customers. Contact iWave to enable Live Chat support.

■Phone

Call us on : +91-80-26683700, 26781643, 26786245

Warranty & RMA

Warranty support for Hardware: 1 Year from iWave or iWave's EMS partner.

For Warranty terms & Registration, scan the QR code or go to :
https://www.iwavesystems.com/support/warranty/

For Return Merchandise Authorization (RMA),scan the QR code or go to :
https://www.iwavesystems.com/support/rma/

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