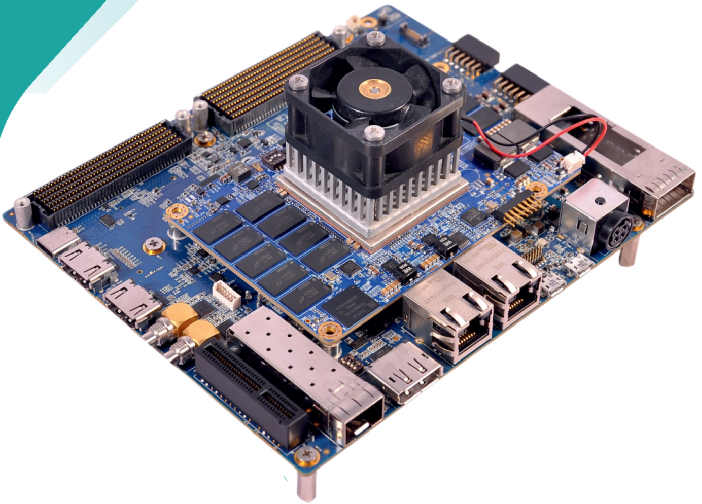


Zynq Ultrascale+ MPSoC (ZU11/17/19EG) SOM Development Platform



**iW-RainboW-G35D
Quick Start Guide**

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Quick Start Guide (QSG)

This Quick Start Guide (QSG) is designed for users to quickly understand the iW-RainboW-G35D-Zynq Ultrascale+ MPSoC (ZU11/17/19EG) 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-G35D Zynq Ultrascale+ MPSoC (ZU11/17/19EG) SOM Development platform incorporates with iWave's Zynq Ultrascale+ MPSoC (ZU11/17/19EG) based SOM and Ultra High Performance carrier board with all necessary interface connectors for developing an embedded application based on Xilinx Zynq Ultrascale+ MPSoC (ZU11/17/19EG).

Some Key Features of the Board Include:

- Zynq US+ MPSoC(ZU11/17/19EG) with 1143K Logic Cells
- 4GB PS DDR4 RAM with ECC
- 4GB Dual PL DDR4
- 8GB eMMC Flash (Boot & OS storage)
- Standard SD and PCIe x 1Port
- Dual Gigabit Ethernet RJ45 Magjack
- SDI Video In and Video Out Connectors
- USB 3.0 Type C and Display Ports
- M.2 Connector for SATA, HDMI IN & OUT Ports
- QSFP+ and SFP+ Connector
- FMC+ HPC and Firefly Connectors
- FMC HPC and 12 Pin PMOD Connectors

Safety

Environmental Compliance

iW-RainboW-G35D-Zynq Ultrascale+ MPSoC (ZU11/17/19EG) 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 ?

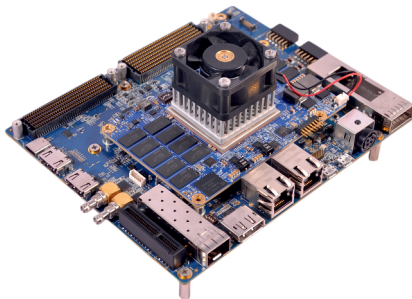
Make sure that, below deliverables are received without any physical damage.



12V, 14A Power Supply



DVD



Development Platform



USB OTG Cable



QSG

Step 3 - Read DVD Contents

Given DVD contains below deliverable folders.

1. Binaries
2. Documents
3. Source Code

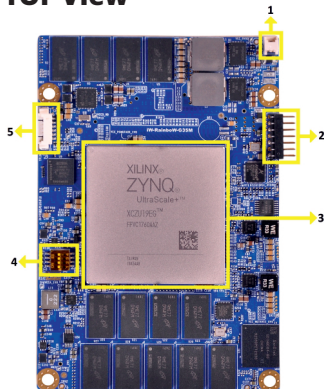
Delivery binaries are available in Binaries folder and Source code files are available in Source Code folder. Also Documents folder contains Hardware User Guide, Software User Guide, Software Release Note and Quick Start Guide (this guide).

Before moving to next step, one must go through all the documents including Hardware User Guides and get familiar about iW-RainboW-G35D Zynq Ultrascale+ MPSoC (ZU11/17/19EG) SOM Development platform.

Source code can be customized according to user wish and corresponding binaries can be generated. Once the binaries generated, user can download the binaries in to the Development platform using JTAG.

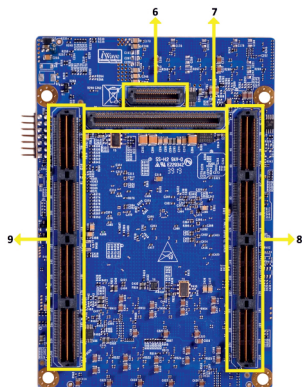
Step 4-Quick View-SOM

TOP View



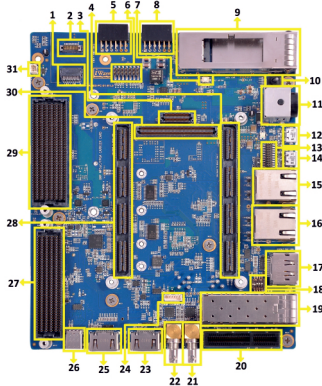
1. 5V FAN Header
2. JTAG Header
3. Zynq US+ MPSoC (ZU11/17/19EG)
4. Boot Mode Switch
5. PMIC Programming Header

BOTTOM View



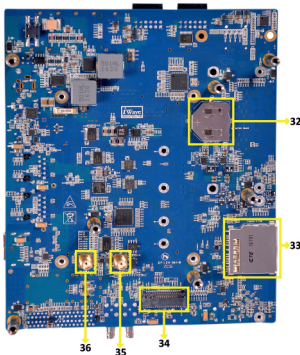
Step 5-Quick View-Carrier Board

TOP View



- 01. Firefly Connector
- 02. Firefly Power Connector
- 03. Board to Board Conn 4
- 04. Board to Board Conn 2
- 05. PMOD Connector 2
- 06. JTAG Header
- 07. RESET Switch
- 08. PMOD Connector 1
- 09. QSFP+ Connector
- 10. Power ON/OFF Switch
- 11. Power IN Connector
- 12. Debug Port
- 13. 20 Pin GPIO Header
- 14. USB OTG Connector
- 15. GEM0 Ethernet Jack
- 16. GEM3 Ethernet Jack
- 17. Display Port
- 18. PS GTR Config Switch
- 19. SFP+ Connector

BOTTOM View

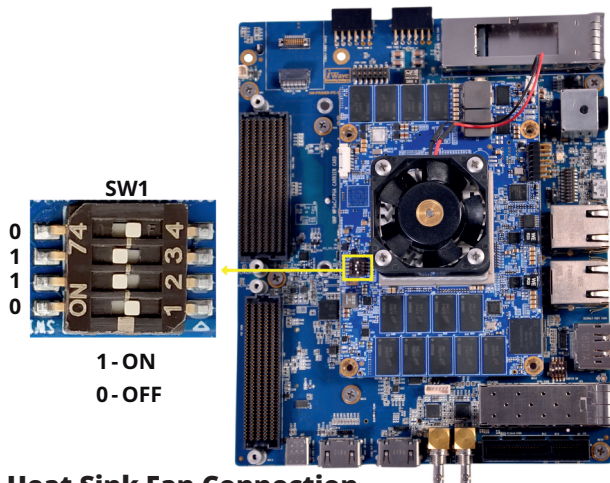


- 20. PCIe x 1 Connector
- 21. SDI IN HD BNC Jack
- 22. SDI OUT HD BNC Jack
- 23. HDMI OUT Connector
- 24. CAN Header
- 25. HDMI IN Connector
- 26. USB Type C Connector
- 27. FMC Connector
- 28. Board to Board Conn 1
- 29. FMC+ Connector
- 30. Board to Board Conn 3
- 31. 12V FAN Header
- 32. RTC Battery Holder
- 33. Standard SD Connector
- 34. M.2 SATA Connector
- 35. SMA Connector 2
- 36. SMA Connector 1

Step 6- Setting-Up

On Board Switch Setting

Make sure that On-SOM Boot Mode Switch (SW1) is set for eMMC boot as shown in below image.



Heat Sink Fan Connection

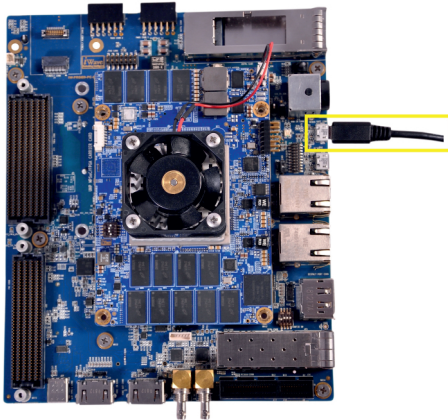
iW-RainboW-G35D Zynq Ultrascale+ MPSoC (ZU11/17/19EG) SOM Development platform comes with Heat Sink + Fan mounted on SOM.

Make sure that Heat Sink Fan is connected to 5V FAN connector (J1) in SOM as shown in the above figure

Do not connect the Heat Sink Fan to 12V FAN Connector in Carrier board

Debug Port Setting

Connect TypeA end of USB cable to PC and MicroB end of USB cable to Development platform's Debug USB MicroAB Connector (J13) as shown below.



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

<http://www.ftdichip.com/Products/ICs/FT232R.html>

Setup the Debug Terminal parameters.

Baud Rate : 115200

Data bits : 8

Parity : None

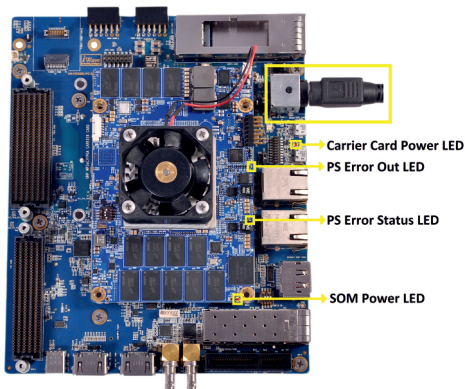
Stop Bits : 1

Flow Control : None

Power-ON the Development Platform

Connect the 12V power supply plug to the power connector (J10) 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 Zynq Ultrascale+ MPSoC(ZU11/17/19EG) 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 Zynq Ultrascale+ MPSoC(ZU11/17/19EG) SOM from carrier board with live power.
3. Contact iWave if power status LEDs are not glowing or PS Error status LEDs are glowing.

Step 7 - 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.

iWave supports below mentioned Operating System Release for iW-RainboW-G35D Zynq Ultrascale+ MPSoC (ZU11/17/19EG) Development platform.



Linux 4.14.0 (or higher)

After OS boots, Login prompt being displayed in the debug terminal. Enter username and password as “root” to get the Linux command prompt as shown below.

```
COM139:115200baud - Tera Term VT
File Edit Setup Control Window Help
28e5ff85dd4c81f
Public key portion in:
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQACzSxUV0V/rk8240U5Goy7WuedLDecJzFKrs/hLnuMAeIPJ6AREZ3
eEUI+UoipwOPPh1DEs48B5d9q5cdM1jcKeqP2K28FgDd1duNmsxD011t1qkeEYmkoLmMx4tUeIC8Qell40M7706aK
KAndp2ubNskIHUwvewZ66p2CM8Qz3l8ealF8h9hew48Z91uP83311Uz23U7Pw7ddBwDf338M8k686z
dC0d13Lh1C127yIn2Qh19qadr3rPh+qS7yN12ctkn9U6YbD83SJKER2qM4JRG7z5uALhL428beg113U0UqPm3B8e
nqALCzPH root@ynqmp-1wg35n
Fingerprint: md5:af1f:a3:0b:d3:46:43:18:2b:9a:3b:66:26:92:4e:2b
dropbear.
(settings daemon) Forking...run with -n to prevent fork
Starting rpkbind daemon...Error: No calibratable devices found.
done.
Activating service name='org.ally.atspi.Registry'
starting statd: Successfully activated service 'org.ally.atspi.Registry'
SpiRegistry daemon is running with well-known name - org.ally.atspi.Registry
done
exportfs: can't open /etc/exports for reading
starting nfsd kernel threads: done
starting mountd: done
Starting syslogd/klogd: done

Rootfs Version : iW-PRGEZ-SC-01-R1.0-REL0.2-PetaLinux2018.3
Starting rcf-agent: OK

Last login: Wed Nov 28 04:59:12 UTC 2019 on tty1
root@ynqmp-1wg35n:~#
root@ynqmp-1wg35n:~#
root@ynqmp-1wg35n:~#
root@ynqmp-1wg35n:~#
root@ynqmp-1wg35n:~#
root@ynqmp-1wg35n:~#
root@ynqmp-1wg35n:~#
```

Command Prompt(Linux)

iWave's Other Products



Product Name: Zynq 7000 SODIMM SOM

Processor: Xilinx Zynq 7000 SoC

RAM: 512MB DDR3*

Application: Industrial Automation, Industrial Equipments, Machine Vision, Control & Measurement.



Product Name: iMX8M Mini SODIMM SOM

Processor: iMX8M Mini SoC

RAM: 1GB LPDDR4*

Application: Industrial HMI, Home Automation, Audio/Video Streaming devices, Digital Signage.

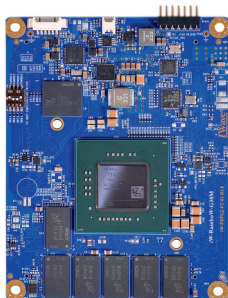


Product Name: iMX8 SMARC SOM

Processor: NXP's iMX8 QuadMax SoC

RAM: 8GB LPDDR4*

Application: Industrial Control Systems & HMI, Portable Medical devices, Augmented & Virtual Reality.



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 Centor, Medical Endoscopy

* RAM Size is Expandable.

Need More Help ?



iWave Systems Provides Technical Support to all Customers Worldwide.

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

■Live Chat

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

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Warranty & RMA

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

For warranty terms, go through below web link,
<http://www.iwavesystems.com/support/warranty.html>

For Return Merchandise Authorization (RMA), below web link,
<http://www.iwavesystems.com/support/rma.html>

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