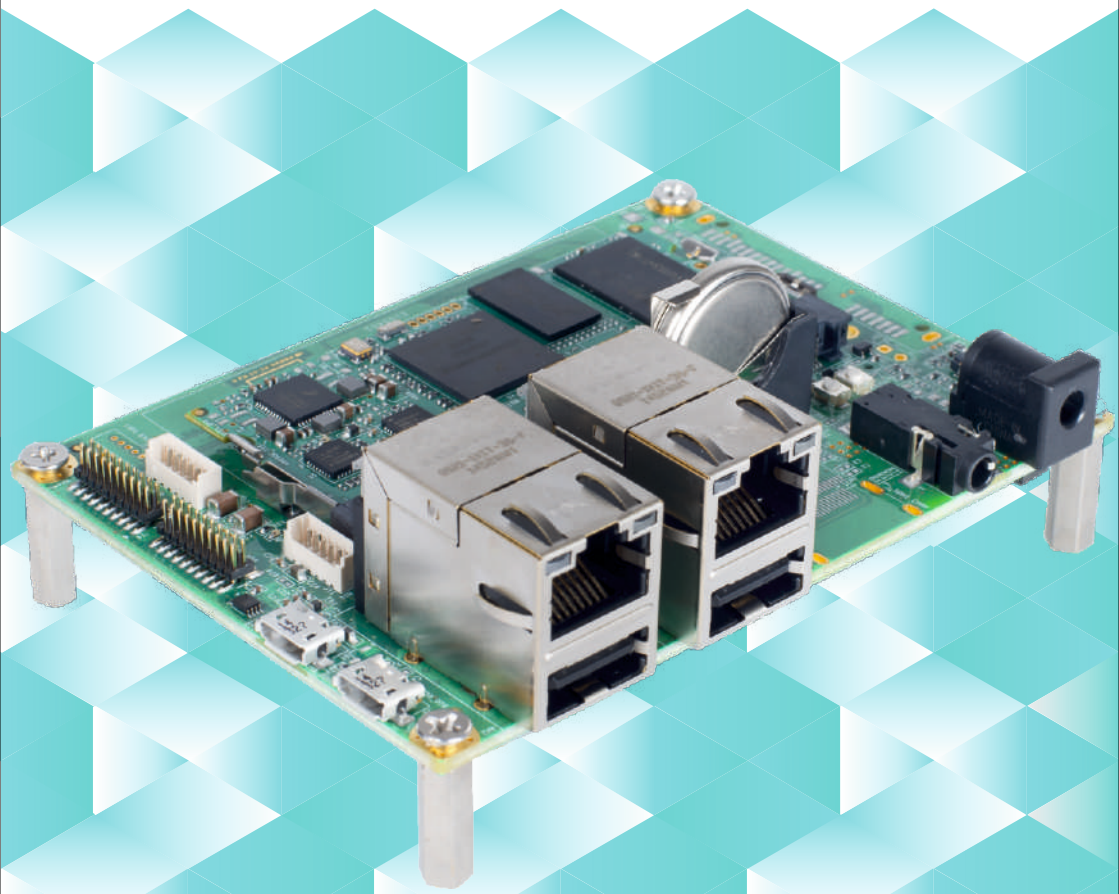
iWave
Embedding Intelligence

i.MX6UL/i.MX6ULL SODIMM SOM
Development Platform



iW-RainboW-G18D
Quick Start Guide

R2.0

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INTRODUCTION

About this Guide

This document is intended as the guide for unpacking iWave's iW-RainboW-G18D - i.MX6UL/ i.MX6ULL SODIMM Development Platform package and setting up the test environment for it. It also gives details about safety information and important cautions which should adhere while using the platform.

Development Platform Overview

The iW-RainboW-G18D Development Platform incorporates i.MX6UL/i.MX6ULL SODIMM SOM which is based on NXP's i.MX6UL/i.MX6ULL application processor and SODIMM Compatible Carrier Board. This platform can be used for quick prototyping of any high end applications in verticals like Automotive, Industrial & Medical. The board is highly packed with all necessary on-board connectors.

Important Symbols Used

Important Note

Warning

Use ESD Protection

ROHS complaint

Check the local regulations for disposal of electronic products

UNPACKING

Safety Information

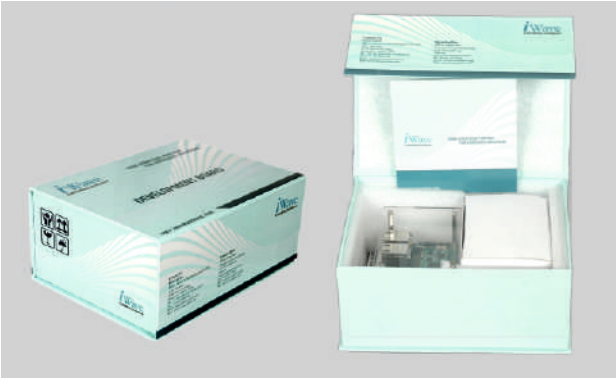
- Before unpacking and installing the Development Platform or adding devices on it, carefully read all the manuals that came with the package.
- Place the product on a stable surface. To avoid short circuits in electronics, keep all conducting material away from the Development Platform.
- Avoid using board in extreme dust, humidity and temperature conditions. Do not place the Development Platform in wet area.
- Before using the Development Platform, make sure that all cables are correctly connected and the power adapter is correctly selected.
- Make sure that Electrical Outlet where you connected the power adapter is not damaged and working fine.
- If the power adapter is broken, do not try to fix it by yourself. To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before displacing the system.
- Don't try to remove the SODIMM SOM module from the Development platform unless really required.
- Before connecting or removing SODIMM SOM module from the Development platform, ensure that power cable is unplugged and ESD antistatic guidelines are followed.

Check the local regulations for disposal of electronic products.

Unpacking Guidelines

Please follow the below guidelines while unpacking the iW-RainboW-G18D Development Platform.

- Make sure to follow the below antistatic guidelines before unpacking.
  - Wear the antistatic wristband while unpacking and handling the Development Platform to prevent electrostatic discharge.
  - Use antistatic pad/mat with proper grounding to place the Development Platform.
  - Don't touch the inside surface of the Development Platform circuit board.
  - Self-grounding: Touch a grounded conductor every few minutes to discharge any excess static build-up.



- Make sure that packing box is facing upwards while opening.
- Make sure that the entire packing list items mentioned in Package Checklist present.

Static electricity can destroy electronics in the Development Platform. Make sure to follow the ESD precautions to prevent damage to the system and injury to the user.

Package Checklist

The iW-RainboW-G18D SODIMM Development Platform will be shipped with the following items:

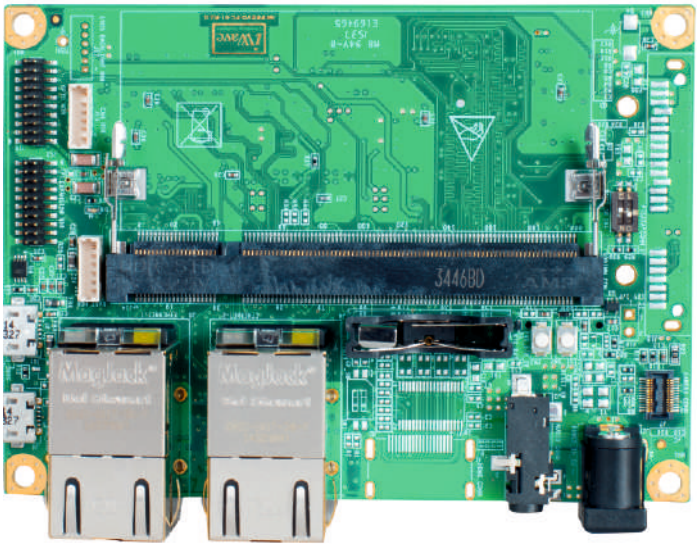
Sl. No.	Package Item	Qty	Image
1	iW-RainboW-G18D i.MX6UL/i.MX6ULL SODIMM Development Platform	1	 RoHS All components used in this system is Lead free and ROHS complaint
2	5V,2.5A Power Adaptor with universal plugs	1	
3	USB OTG Cable	1	
4	DVD (Please refer DVD Content section)	1	

Do not proceed with installation, if any of the items listed in the above checklist is missing or damaged. Contact iWave support team.

Get to Know the SODIMM Development Platform

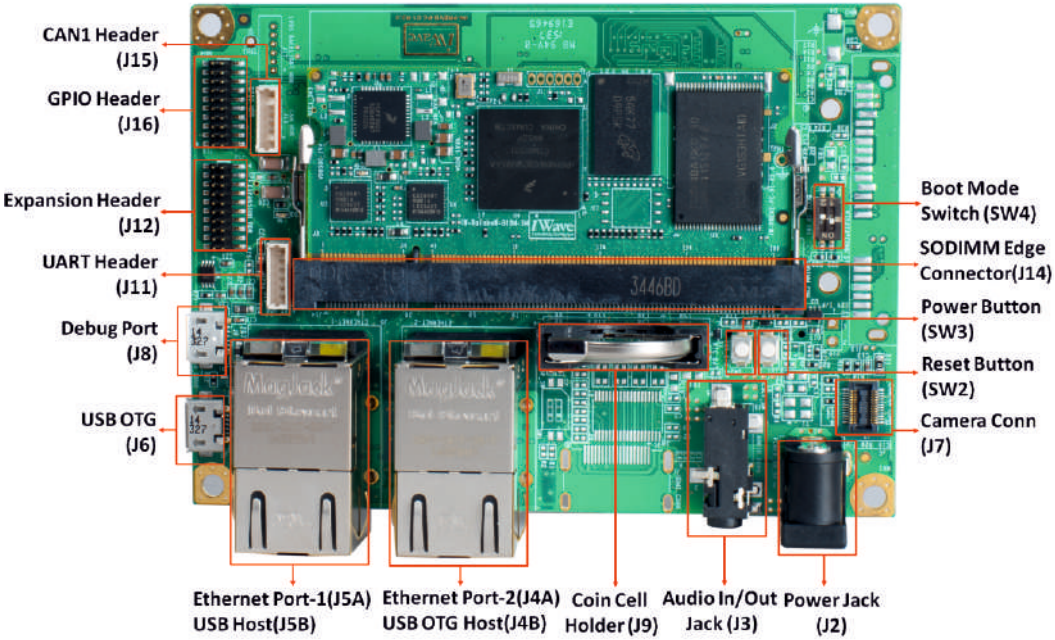
iW-RainboW-G18D Development platform consists of 67.6mmx29mm i.MX6UL/i.MX6ULL SODIMM SOM and 70mmx100mm Pico-ITX form factor SODIMM Carrier Card as shown in below figure.

i.MX6UL/.MX6ULL SODIMM SOM



SODIMM Carrier Card

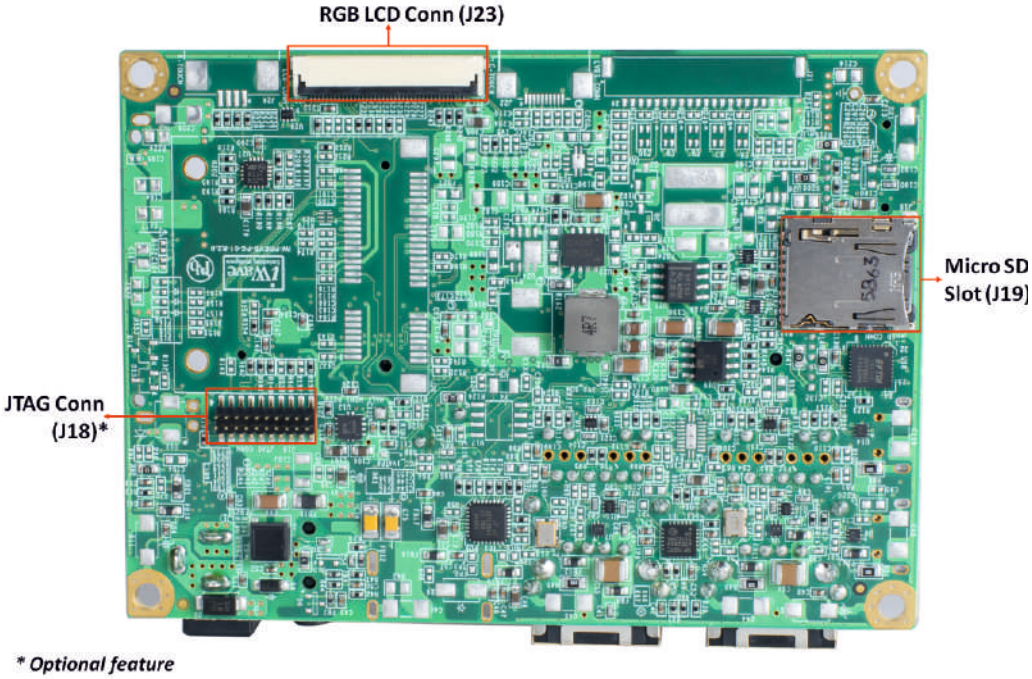
iW-RainboW-G18D Development platform top side major components location is shown in the below figure.



Top View of Development Platform

Refer Hardware User Guide for more details

iW-RainboW-G18D Development platform bottom side major components location is shown in the below figure.



Bottom View of Development Platform

SETTING UP THE TEST ENVIRONMENT

Getting Start

This section describes the step by step procedure to setup the test environment for iW-RainboW-G18D Development Platform.

- Read the Development Platform Documents
- Check Boot Mode setting
- Setting up the Debug port
- Power ON the Development Platform

Read the Documents

Before setting up the test environment, one must read all the documents of the iW-RainboW-G18D Development Platform to know about the system, its features and to get familiar with it. These documents are available in the DVD which comes along with the iW-RainboW-G18D Package.

Below mentioned documents are available in the DVD,

- i.MX6UL/i.MX6ULL SODIMM DevKit Quick start Guide (This Guide)
- i.MX6UL/i.MX6ULL SODIMM SOM Hardware User Guide
- i.MX6UL/i.MX6ULL SODIMM DevKit Hardware User Guide
- i.MX6UL/i.MX6ULL SODIMM SOM Software User Guide
- i.MX6UL/i.MX6ULL SODIMM SOM Software Release Note

Refer DVD contents section to know about the DVD content structure and system related document's path.

Boot Mode Setting

iW-Rainbow-G18D Development Platform supports different boot mode options for booting.

- Internal Boot Mode (Default):
  This mode is used for normal booting and default set while shipping. Please make sure that boot mode switch (SW4) is in this mode while setting up the Test Environment.

- Serial Downloader Mode:
  This mode is used when user wants to program boot media using MFG Tool. For more details, please refer Software User Guide.

Boot modes can be selected by user using boot mode switch (SW4) settings on SODIMM Carrier Board as mentioned below . For more details, refer SODIMM Carier Board Hardware User Guide.

Boot Mode Settings Truth Table

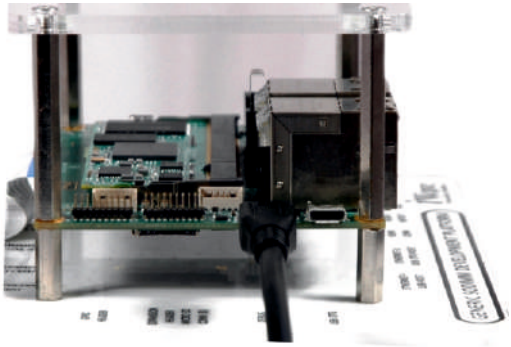
Boot Mode Setting On SODIMM Carrier Board	SW4 (2 Position Switch)		
	POS1	POS2	Image
Internal Boot Mode (Default)	ON	OFF	
Serial Downloader Mode	OFF	ON	
ON - High OFF - Low			

Use ESD Protection while changing the switch setting.

Debug Port Setting

iW-RainboW-G18D Development Platform supports Micro USB Connector as Debug port for Debugging and Testing. Please follow the below procedure to setup the Debug port of Development Platform.

- Use USB MicroAB to TypeA cable to connect between Development Platform and PC for debugging. Connect TypeA end of USB cable to PC and MicroAB end of USB cable to Development Platform's debug Micro USB connector(J8) as shown below.



Debug Port Connection

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

  Drivers located at: http://www.ftdichip.com/Products/ICs/FT232R.htm

- Open the HyperTerminal on PC/Laptop with the following setting.

  Baud rate : 115200 bps
  Data bits : 8
  Parity : None
  Stop bits : 1
  Flow control : None

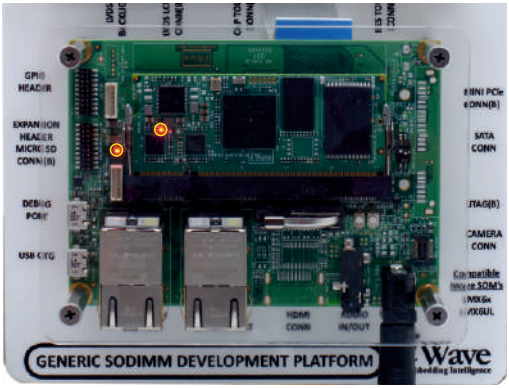
Powering ON iW-RainboW-G18D

iW-RainboW-G18D platform comes with 5V, 2.5A power supply with universal plugs. Please follow the below procedure to power ON the Development Platform.

- Connect the 5V power supply plug to the power connector (J2) of the iW-RainboW-G18D Development Platform as shown below and switch ON the power supply.

Power Supply Connection

- Once Power is applied to iW-RainboW-G18D Development Platform, the Power LED in the i.MX6UL/i.MX6ULL SOM module and SODIMM Carrier Board will glow as shown below.



Power ON Indication

Do not proceed with installation, if the Power Status LED is blinking or not glowing. Contact iWave support team.

Done with Test Environment

Once power is applied to iW-RainboW-G18D Development Platform as explained in the previous section, the HyperTerminal of the PC/Laptop which is connected to the Development Platform will immediately show the boot messages of the boot loader.

iWave supports below mentioned Operating System Release for iW-RainboW-G18D Development Platform.

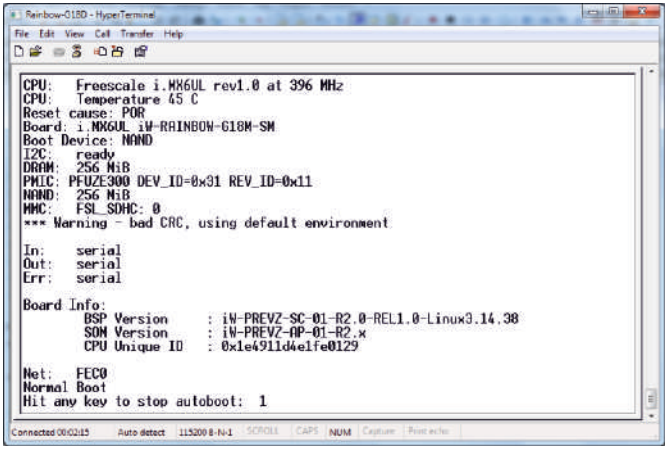
- Linux 4.1.15 or Higher

Depending upon the supported Operating system and boot loader on particular delivery, the Hyper Terminal will show the boot messages as described in the following section.

1. **Development Platform comes with bootable binary in default boot media.**
2. **Make sure that all the steps mentioned in Getting Start section is followed.**

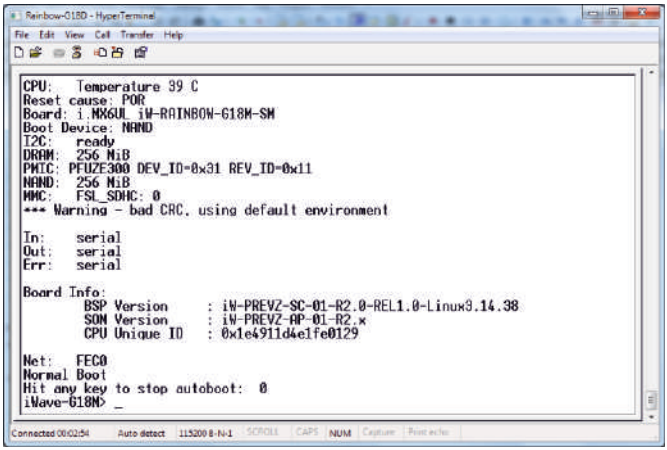
Linux Test Environment

- In Linux Release, U-boot boot messages will appear in HyperTerminal as shown below.



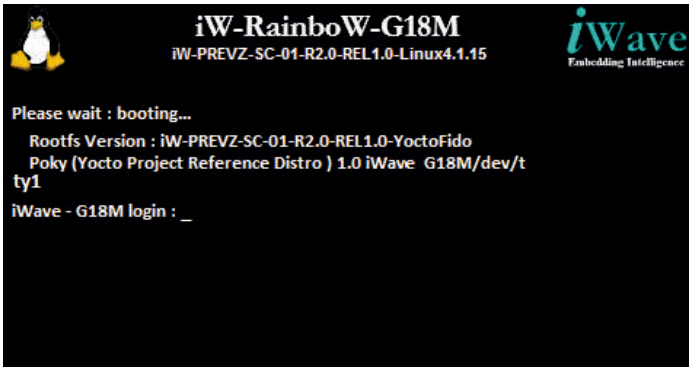
U-boot on Terminal

- Immediately after power on, Press any key in HyperTerminal to go to the U-boot command prompt as shown below. Otherwise Linux will launch automatically.



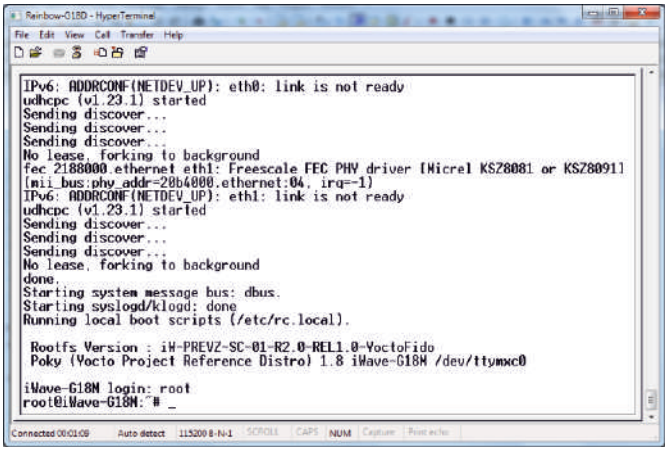
U-boot Command Prompt

- Once linux is launched, the LCD will show the prints as shown below and HyperTerminal will show the Linux Login.



4.3" LCD after Linux launch

- To Login in Linux, enter “root” in terminal and you will get the Linux command prompt as shown below. Once you get the prompt you are done with Test Environment setup on Linux delivery.



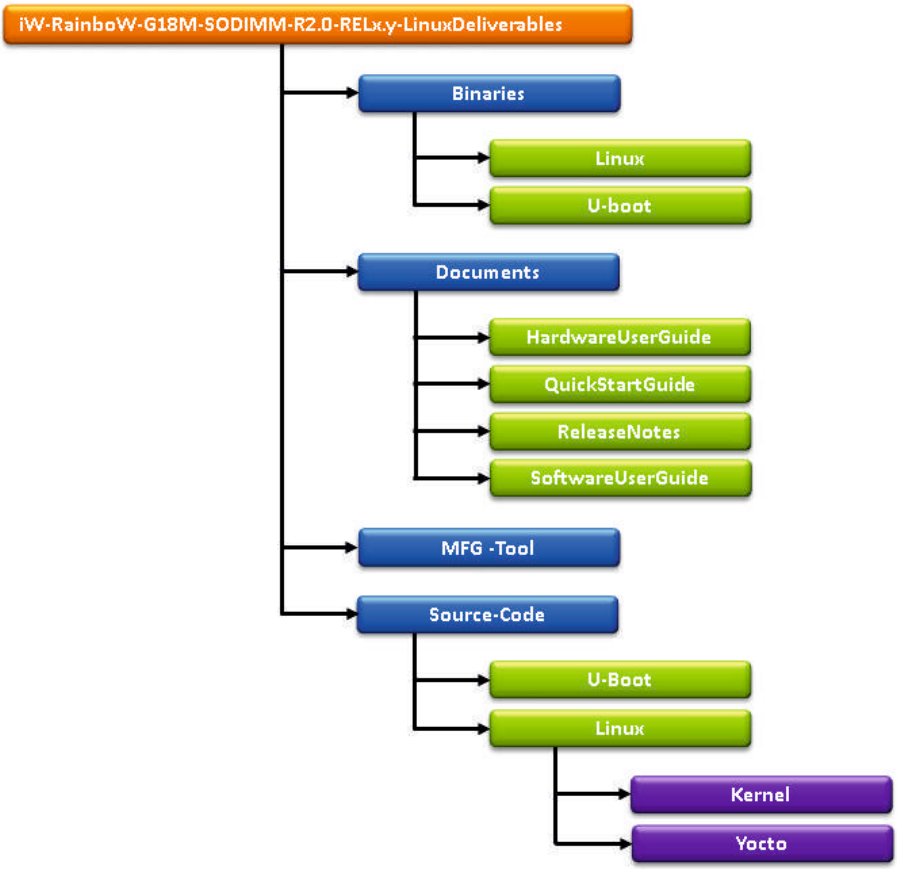
Linux Command Prompt

Refer Linux Software User Guide for further details.

DVD Contents

The following Figure show the DVD content structure for Linux Operating System Release.

Linux Release DVD Contents



iWave continuously improves software releases with latest kernel version. Contact iWave for latest software release detail.

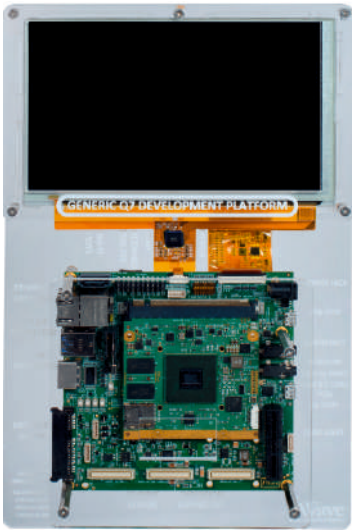
iWave's New Products

iW-RainboW-G21M-RZ/G1H Qseven SOM

The RZ/G1H Qseven SOM is based on Renesas's RZ/G1H CPU with built-in Quad ARM™ Cortex-A15 Microprocessor core and Quad ARM™ Cortex-A7 Microprocessor core both can operate up to 1.4 GHz/core and 780MHz/core respectively.

This product can be used for quick prototyping of any high end applications in verticals like Automotive, Industrial & Medical.

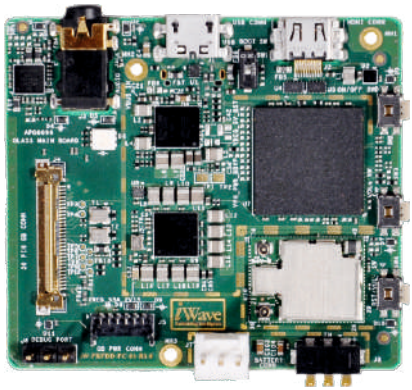
iW-RainboW-G20D-RZ/G1M Qseven Development Platform



The Development Platform incorporates Qseven compatible RZ/G1M SOM which is based on Renesas's RZ/G Series 1.5GHz Dual Core processor and Generic Qseven compatible Development Board.

This development Platform can be used for quick prototyping of various applications targeted by the RZ/G1M processor. Being a nano ITX form factor with 120mmx120mm size, the board is highly packed with all necessary onboard connectors to validate complete RZ/G1M CPU features.

iW-RainboW-G25S-Snapdragon820 SBC



The Snapdragon 820 SBC powered with Qualcomm's APQ8096 SOC is cost effective single board solution offering 64-bit Quad Kryo CPU, H.265 hardware decode & encode, Adreno 530 GPU with on board 802.11ac Wi-Fi, BT4.1 and the GPS.

The SBC is ideally suitable for high end embedded computing applications which requires high processing power, graphics and multimedia capabilities.

iW-RainboW-G15M-i.MX6 SODIMM SOM

The i.MX6 SODIMM SOM is industry latest ultra-compact yet highly integrated SOM based on NXP's i.MX6 Series Quad/Dual/Solo core processor running at 1GHz. A single ruggdeized SODIMM connector provides the carrier board interface to carry all the I/O signals to and from the SODIMM module.

This i.MX6 Quad/Dual/Dual Lite/Solo based SODIMM module integrates all standard interfaces into a single board with ultra compact yet highly integrated platform that can be utilized across multiple embedded PC, system and industrial designs. It has got all the necessary functions that the embedded world demands.

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