

i.MX6 Qseven SOM Development Platform



iW-RainboW-G15D Quick Start Guide

Disclaimer

iWave Systems reserves the right to change details in this publication including but not limited to any Product specification without notice.

No warranty of accuracy is given concerning the contents of the information contained in this publication. To the extent permitted by law no liability (including liability to any person by reason of negligence) will be accepted by iWave Systems, its subsidiaries or employees for any direct or indirect loss or damage caused by omissions from or inaccuracies in this document.

Trademarks

All registered trademarks, product names mentioned in this publication are the property of their respective owners and used for identification purposes only.

Technical Support

iWave Systems technical support team is committed to provide the best possible support for our customers so that our Hardware and Software can be easily migrated and used.

For assistance, contact our Technical Support team at,

Address	: iWave Systems Technologies Pvt. Ltd. # 7/B, 29th Main,BTM Layout 2nd Stage, Bangalore, India – 560076
Email	: support.ip@iwavesystems.com
Website	: www.iwavesystems.com

INTRODUCTION

About this Guide

This document is intended as the guide for unpacking iWave's iW-RainboW-G15D - i.MX6 Qseven 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 installing the platform.

Development Platform Overview

The iW-RainboW-G15D Development Platform incorporates Qseven compatible i.MX6 SOM which is based on Freescale's i.MX6 Series application processor and Generic Qseven 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 to validate almost complete i.MX6 CPU features.

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 platform in extreme dust, humidity and temperature conditions. Do not place the Development platform in wet area.
- Before using the platform, make sure that all cables are correctly connected and the power adopter 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 Qseven SOM module from the Development platform unless really required.
- Before connecting or removing Qseven 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-G15D Development platform.

- Make sure to follow the below antistatic guidelines before unpacking.
- Wear the anti-static wristband while unpacking and handling the Development platform to prevent electrostatic discharge.
- Use anti-static 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 platform. Make sure to follow the ESD precautions to prevent damage to the platform and injury to the user.

Package Checklist

The iW-RainboW-G15D Qseven Development Platform will be shipped with the following items:

Sl. No.	Package Item	Qty	Image
1	iW-RainboW-G15D i.MX6 Qseven Development Platform	1	  <p>All components used in this platform is Lead free and ROHS complaint</p>
2	12V,2A Power Adaptor with universal plugs	1	
3	Debug USB Cable	1	
4	Quick Start Guide Hard copy	1	
5	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.

SETTING UP THE TEST ENVIRONMENT

Getting Start

This section describes the step by step procedure to setup the test environment for iW-RainboW-G15D Development System.

- Read the Development Platform Documents
- Check Boot Mode Switch setting
- Check Boot Media Switch 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-G15D Development platform to know about the Platform, its features and to get familiar with it. These documents are available in the DVD which comes along with the iW-RainboW-G15D Package.

Below mentioned documents are available in the DVD,

- iW-RainboW-G15D Quick start Guide (This Guide)
- i.MX6 Qseven SOM Hardware User Guide
- Generic Qseven Carrier Board Hardware User Guide
- Software User Manual
- Release Notes for Software



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



Boot Mode Setting

iW-Rainbow-G15D 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 (SW2) 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 Manual.

Boot modes can be selected by user using boot mode switch (SW2) settings on i.MX6 SOM as mentioned below . For more details, refer i.MX6 Qseven SOM Hardware User Guide.

Boot Mode Settings Truth Table

Boot Mode Setting On i.MX6 SOM	SW2 (2 Position Switch)		
	POS1	POS2	Image
Internal Boot Mode (Default)	OFF	ON	
Serial Downloader Mode	ON	OFF	
ON - High OFF - Low			






Use ESD Protection while changing the switch setting.

Boot Media Setting

iW-Rainbow-G15D platform supports different boot media options for booting. Boot media can be selected by user using boot media switch (SW1) settings on i.MX6 SOM as mentioned below.

Boot Media Settings Truth Table

Boot Media Setting On i.MX6 SOM	SW1 (8 Position Switch)								Image
	POS1	POS2	POS3	POS4	POS5	POS6	POS7	POS8	
eCSPI1- SPI Flash (Default)	ON	ON	OFF	X	X	X	X	X	
SD3-4 bit Micro SD	OFF	OFF	ON	OFF	ON	ON	OFF	OFF	
SD4-8 bit eMMC	OFF	ON	ON	ON	ON	OFF	ON	OFF	
ON - High OFF - Low X - Don't Care									



1. iW-RainboW-G15D platform is loaded with binaries on default boot media.
2. If different boot media is selected other than default one, make sure to load bootable binaries in selected boot media.

Debug Port Setting

iW-RainboW-G15D platform comes with Debug MicroAB to Type A cable for easy debugging and testing. Please follow the below procedure to setup the Debug Micro USB of Development platform.

- Connect TypeA end of USB cable to PC and Micro AB end of USB cable to Development platform's debug Micro USB connector(J15) 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-G15D

iW-RainboW-G15D platform comes with 12V, 2A power supply with universal plugs. Please follow the below procedure to power ON the Development platform.

- Connect the 12V power supply plug to the power connector (J3) of the iW-RainboW-G15D platform as shown below and switch ON the power supply.

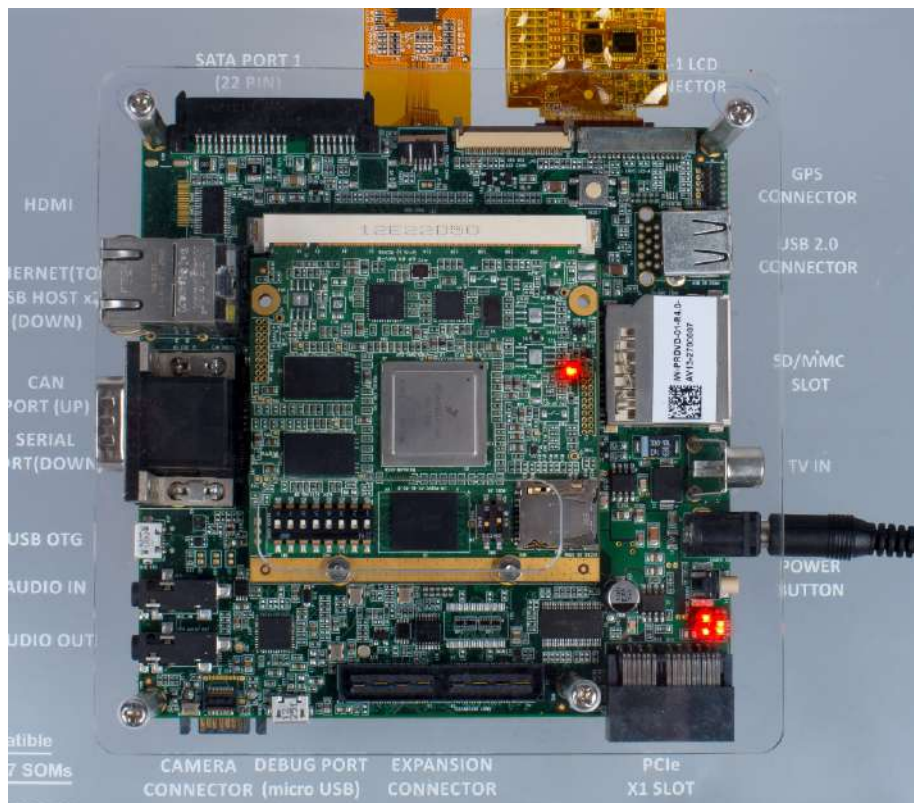


Power Supply Connection



Do not use different power adapter other than the supplied one.

- Once Power is applied to iW-RainboW-G15D platform, the Power LEDs in the i.MX6 SOM module and Generic Qseven carrier board will glow as shown below.



Power ON Indication



Do not proceed with installation, if any of the Power Status LEDs are blinking or not glowing. Contact iWave support team.

Done with Test Environment

Once power is applied to iW-RainboW-G15D 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 Releases for iW-RainboW-G15D Development platform.

- Linux 3.10.17 (or higher)
- Android 4.3 (or higher)
- Windows Embedded Compact 7

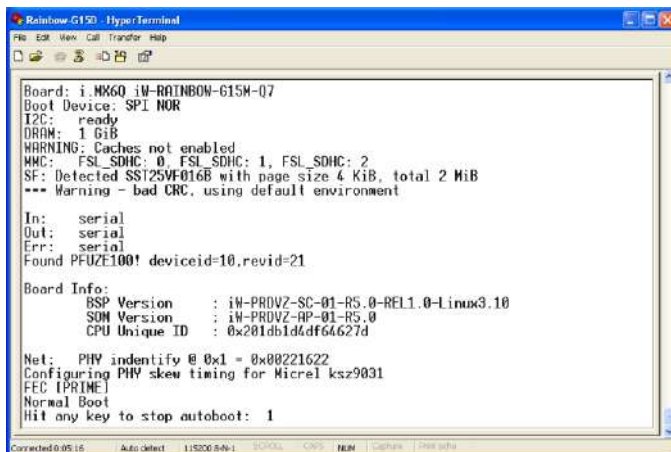
Depending upon the supported Operating system and boot loader on particular delivery, the Hyper Terminal will show the boot messages as described in the following section.



1. 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 Hyper Terminal as shown below.



```

Rainbow-G15D - HyperTerminal
File Edit View Call Transfer Help

Board: i.MX6Q iW-Rainbow-G15M-07
Boot Device: SPI NOR
I2C: ready
DRAM: 1 GiB
WARNING: Caches not enabled
MMC: FSL_SDHC: 0, FSL_SDHC: 1, FSL_SDHC: 2
SF: Detected SST25VF016B with page size 4 KiB, total 2 MiB
*** Warning - bad CRC, using default environment

In: serial
Out: serial
Err: serial
Found PFUZE100! deviceid=10,revid=21

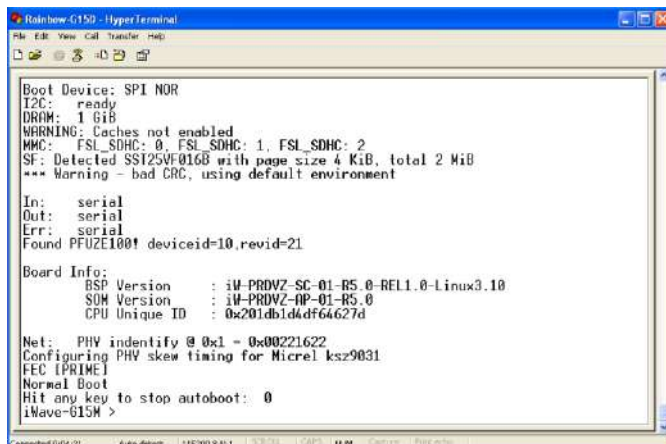
Board Info:
  BSP Version      : iW-PRODVZ-SC-01-R5.0-REL1.0-Linux3.10
  SOM Version      : iW-PRODVZ-AP-01-R5.0
  CPU Unique ID    : 0x201db1d4d64627d

Net: PHY identify @ 0x1 = 0x00221622
Configuring PHY skew timing for Micrel ksz9031
FEC [PRIME]
Normal Boot
Hit any key to stop autoboot: 1

```

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.



```

Rainbow-G15D - HyperTerminal
File Edit View Call Transfer Help

Boot Device: SPI NOR
I2C: ready
DRAM: 1 GiB
WARNING: Caches not enabled
MMC: FSL_SDHC: 0, FSL_SDHC: 1, FSL_SDHC: 2
SF: Detected SST25VF016B with page size 4 KiB, total 2 MiB
*** Warning - bad CRC, using default environment

In: serial
Out: serial
Err: serial
Found PFUZE100! deviceid=10,revid=21

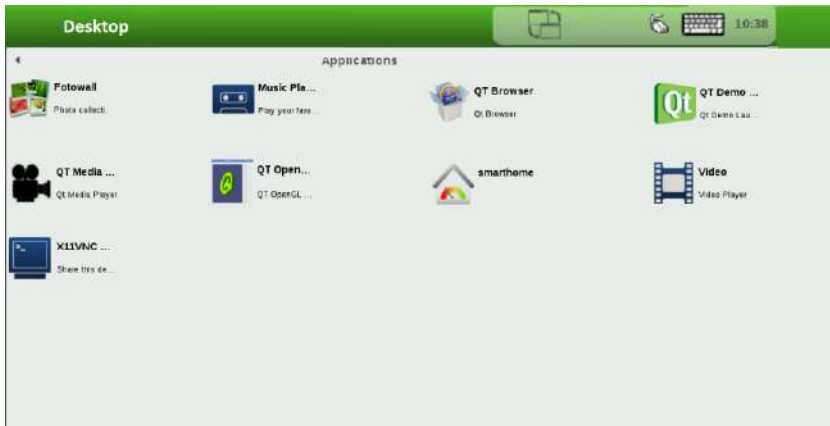
Board Info:
  BSP Version      : iW-PRODVZ-SC-01-R5.0-REL1.0-Linux3.10
  SOM Version      : iW-PRODVZ-AP-01-R5.0
  CPU Unique ID    : 0x201db1d4d64627d

Net: PHY identify @ 0x1 = 0x00221622
Configuring PHY skew timing for Micrel ksz9031
FEC [PRIME]
Normal Boot
Hit any key to stop autoboot: 0
iWave-G15M >

```

U-boot Command Prompt

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



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.

```

Rainbow-G15D - HyperTerminal
File Edit View Call Transfer Help
[Icons]
Starting system message bus: dbus.
Starting Connection Manager
Starting Dropbear SSH server: dropbear.
Starting advanced power management daemon: No APM support in kernel
(failed.)
vgaarb: this pci device is not a vga device
creating NFS state directory: done
NFS daemon support not enabled in kernel
Starting syslogd/klogd: done
vgaarb: this pci device is not a vga device
* Starting Avahi mDNS/DNS-SD Daemon: avahi-daemon
...done.
Starting Telephony daemon
Starting Linux NFC daemon
Starting OProfileUI server
Running local boot scripts (/etc/rc.local).
/etc/rc.local: line 15: autohdmi: command not found
Stopping Bootlog daemon: bootlogd.

Rootfs Version : iW-PROVZ-SC-01-RS.0-REL1.0-YoctoPoky
Poky (Yocto Project Reference Distro) 1.5.1 iWave-G15M /dev/ttymxcl

iWave-G15M login: root
root@iWave-G15M:~#
    
```

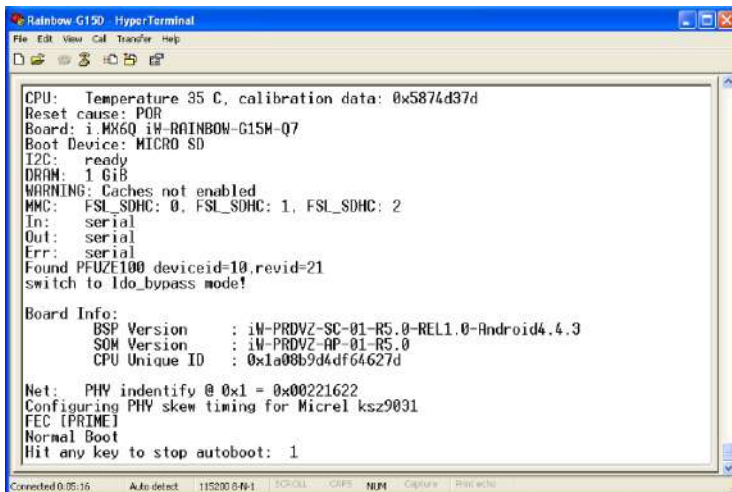
Linux Command Prompt



Refer Linux Software User Manual for further details.

Android Test Environment

- In Android Release, U-boot boot messages will appear in Hyper Terminal as shown below.



```

Rainbow G15D - HyperTerminal
File Edit View Call Transfer Help
[Icons]

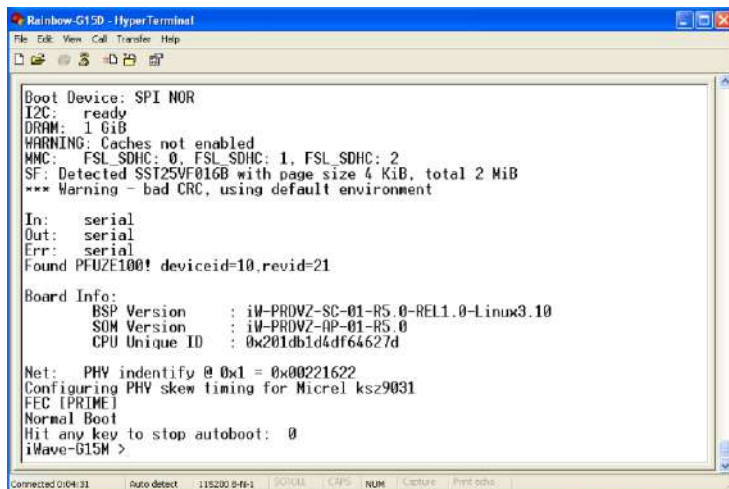
CPU: Temperature 35 C, calibration data: 0x5874d37d
Reset cause: POR
Board: i.MX6Q iW-RainboW-G15M-Q7
Boot Device: MICRO SD
I2C: ready
DRAM: 1 GiB
WARNING: Caches not enabled
MMC: FSL_SDHC: 0, FSL_SDHC: 1, FSL_SDHC: 2
In: serial
Out: serial
Err: serial
Found PFUZE100 deviceid=10,revid=21
switch to ldo_bypass mode!

Board Info:
  BSP Version      : iW-PRDVZ-SC-01-R5.0-REL1.0-Android4.4.3
  SOM Version      : iW-PRDVZ-AP-01-R5.0
  CPU Unique ID    : 0x1a08b9d4df64627d

Net: PHY identify @ 0x1 = 0x00221622
Configuring PHY skew timing for Micrel ksz9031
FEC [PRIME]
Normal Boot
Hit any key to stop autoboot: 1
Connected 0:05:16 Auto detect 115200 8-N-1 SERIAL CAPS NUM Capture Print echo
  
```

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 Android will launch automatically.



```

Rainbow G15D - HyperTerminal
File Edit View Call Transfer Help
[Icons]

Boot Device: SPI NOR
I2C: ready
DRAM: 1 GiB
WARNING: Caches not enabled
MMC: FSL_SDHC: 0, FSL_SDHC: 1, FSL_SDHC: 2
SF: Detected SST25VF016B with page size 4 KiB, total 2 MiB
*** Warning - bad CRC, using default environment

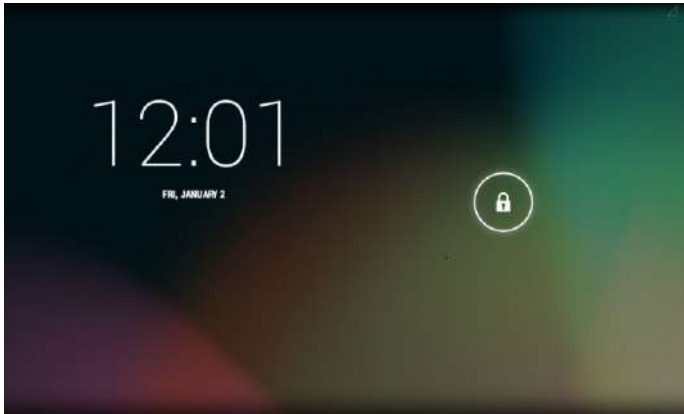
In: serial
Out: serial
Err: serial
Found PFUZE100! deviceid=10,revid=21

Board Info:
  BSP Version      : iW-PRDVZ-SC-01-R5.0-REL1.0-Linux3.10
  SOM Version      : iW-PRDVZ-AP-01-R5.0
  CPU Unique ID    : 0x201db1d4df64627d

Net: PHY identify @ 0x1 = 0x00221622
Configuring PHY skew timing for Micrel ksz9031
FEC [PRIME]
Normal Boot
Hit any key to stop autoboot: 0
iWave-G15M >
Connected 0:04:31 Auto detect 115200 8-N-1 SERIAL CAPS NUM Capture Print echo
  
```

U-boot Command Prompt

Once Android is launched, the LCD will show the Android screen as shown below and HyperTerminal will show the Android command prompt.



LCD after Android Launch

- Press Enter key in terminal to see the Android command prompt as shown below. Once you get the prompt you are done with Test Environment setup on Android delivery.

```

Rainbow-G150 - HyperTerminal
File Edit View Call Transfer Help
[Icons]

rt5610_read reg=0x3c,
rt5610_read reg=0x3e,
imx-hdmi-audio imx-hdmi-audio: HDMI Video is not ready!
imx-hdmi-audio imx-hdmi-audio: ASoC: can't open platform imx-hdmi-audio: -22
imx-hdmi-audio imx-hdmi-audio: HDMI Video is not ready!
imx-hdmi-audio imx-hdmi-audio: ASoC: can't open platform imx-hdmi-audio: -22
warning: 'zygote' uses 32-bit capabilities (legacy support in use)
request_suspend_state: wakeup (3->0) at 24534930336 (1970-01-02 00:00:45.3685023
35 UTC)
lowmemorykiller: lowmem_shrink: convert oom_adj to oom_score_adj:
lowmemorykiller: oom_adj 0 => oom_score_adj 0
lowmemorykiller: oom_adj 1 => oom_score_adj 58
lowmemorykiller: oom_adj 2 => oom_score_adj 117
lowmemorykiller: oom_adj 3 => oom_score_adj 176
lowmemorykiller: oom_adj 9 => oom_score_adj 529
lowmemorykiller: oom_adj 15 => oom_score_adj 1000
fec 2188000 ethernet eth0: Freescale FEC PHY driver [Micrel KSZ9031 Gigabit PHY]
(mii_bus:phy_addr=2188000, ethernet:01, irq=1)
IPv6: ADDRCONF(NETDEV_UP): eth0: link is not ready
acc_open
acc_release
init: sys_prop: permission denied uid:1003 name:service.bootanim.exit
root@iWave-G15M: / #
    
```

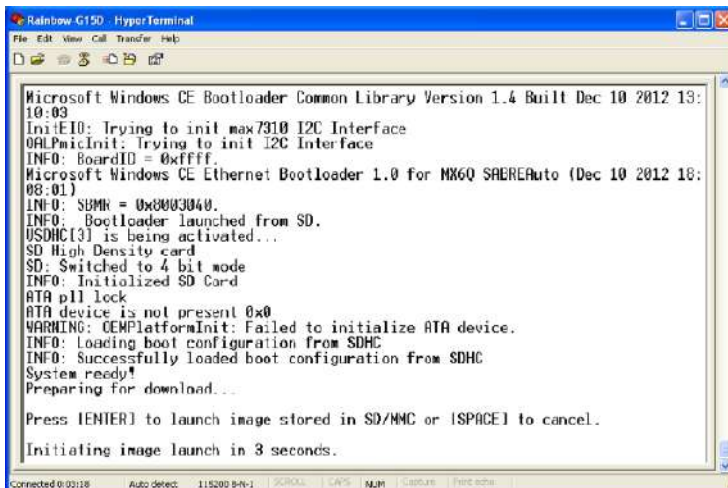
Android Command Prompt

Note

Refer Android Software User Manual for further details.

WEC7 Test Environment

- In WEC7 Release, E-boot boot messages will appear in HyperTerminal as shown below.



```

Rainbow-G15D - HyperTerminal
File Edit View Call Transfer Help
[Icons]

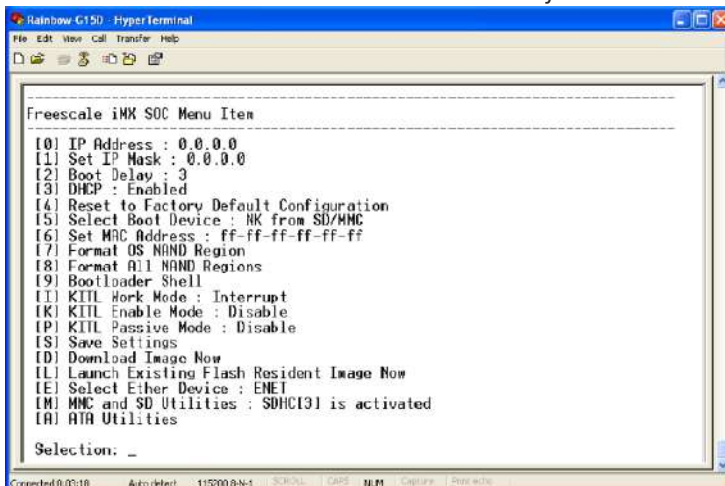
Microsoft Windows CE Bootloader Common Library Version 1.4 Built Dec 10 2012 13:
10:03
InitI2C: Trying to init max7310 I2C Interface
OALPmicInit: Trying to init I2C Interface
INFO: BoardID = 0xFFFF.
Microsoft Windows CE Ethernet Bootloader 1.0 for MX6Q SABREAuto (Dec 10 2012 18:
08:01)
INFO: SBMR = 0x0003040.
INFO: Bootloader launched from SD.
USDHC[3] is being activated...
SD High Density card
SD: Switched to 4 bit mode
INFO: Initialized SD Card
ATA p11 lock
ATA device is not present 0x0
WARNING: CEMPlatformInit: Failed to initialize ATA device.
INFO: Loading boot configuration from SDHC
INFO: Successfully loaded boot configuration from SDHC
System ready!
Preparing for download...

Press [ENTER] to launch image stored in SD/MMC or [SPACE] to cancel.

Initiating image launch in 3 seconds.
  
```

E-Boot on HyperTerminal

- Immediately after power on, Press Space key in HyperTerminal to go to the E-boot command prompt as shown below. Otherwise WEC7 will launch automatically.



```

Rainbow-G15D - HyperTerminal
File Edit View Call Transfer Help
[Icons]

Freescale iMX SOC Menu Item
-----
[0] IP Address : 0.0.0.0
[1] Set IP Mask : 0.0.0.0
[2] Boot Delay : 3
[3] DHCP : Enabled
[4] Reset to Factory Default Configuration
[5] Select Boot Device : RK from SD/MMC
[6] Set MAC Address : ff-ff-ff-ff-ff-ff
[7] Format OS NAND Region
[8] Format All NAND Regions
[9] Bootloader Shell
[1] KILN Work Mode : Interrupt
[1K] KILN Enable Mode : Disable
[1P] KILN Passive Mode : Disable
[1S] Save Settings
[1D] Download Image Now
[1L] Launch Existing Flash Resident Image Now
[1E] Select Ether Device : EN1
[1M] MMC and SD Utilities : SDHC[3] is activated
[1A] ATA Utilities

Selection: _
  
```

E-boot Command Prompt

- Once WEC7 is launched, the LCD will show the WEC7 screen as shown below. Once you get the WEC7 screen, you are done with Test Environment setup on WEC7 delivery.



7" LCD after WEC7 Launch



Refer WEC7 Software User Manual for further details.

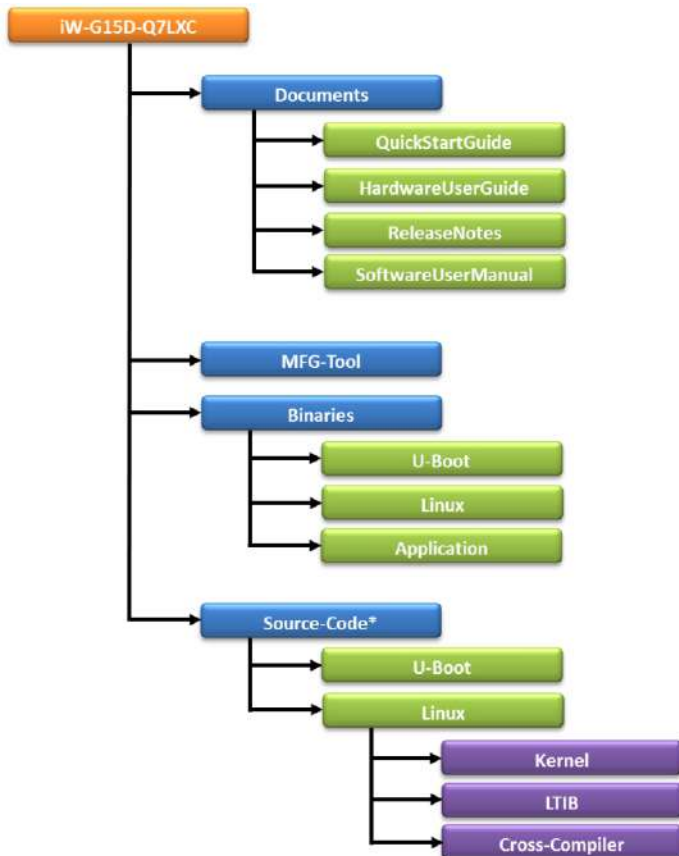
DVD Contents

iWave supports below mentioned Operating System Releases for iW-RainboW-G15D Development platform

- iW-G15D-Q7LXC - Linux 3.10.17 or higher
- iW-G15D-Q7LAC - Android 4.3 or higher
- iW-G15D-Q7WCC - Windows Embedded Compact 7

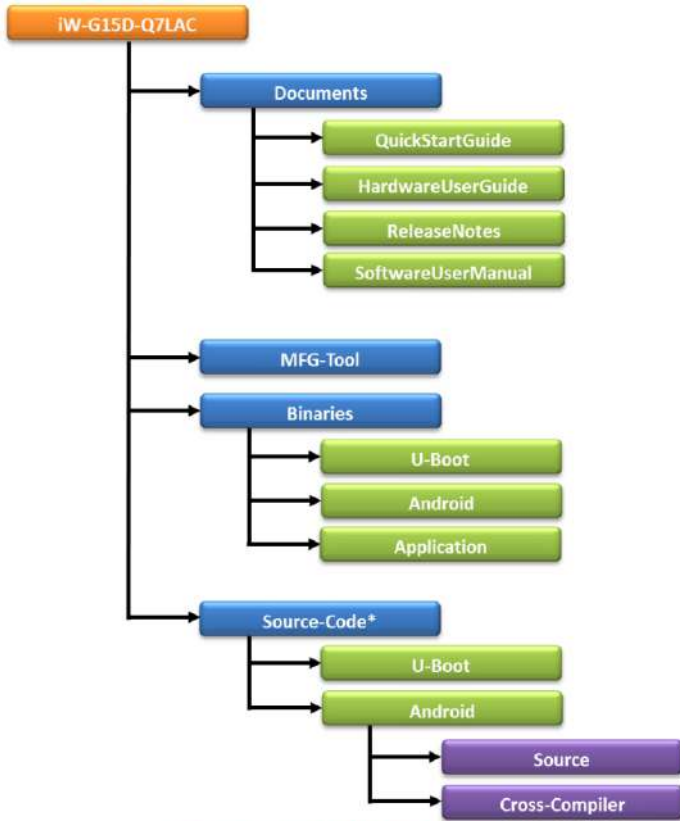
DVD contents will differ depending upon the operating system supported on the particular delivery. The following Figures show the DVD content structure of each Operating System Release.

Linux Release DVD Contents



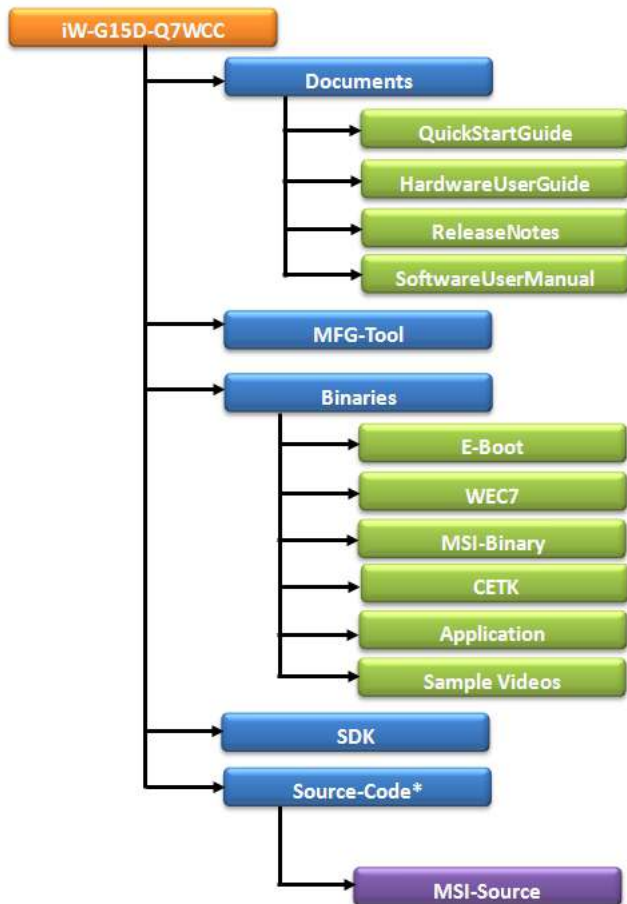
***Only Applicable for BSP source delivery**

Android Release DVD Contents



***Only Applicable for BSP source delivery**

WCE7 Release DVD Contents



*Only Applicable for BSP source delivery



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

iWave's other i.MX6 Products

iW-RainboW-G15M-i.MX6 MXM SOM

The i.MX6 MXM SOM is based on Freescale's i.MX6 Series Quad/Dual/Solo core processor running at 1GHz. A single ruggedized MXM connector provides the carrier board interface to carry all the I/O signals to and from the MXM module. With 1080p HD decoding & encoding and 2D/3D graphics an enhanced and optimized user experience is achieved .



iW-RainboW-G15M-SODIMM SOM

The i.MX6 SODIMM SOM is industry latest ultra-compact yet highly integrated SOM based on Freescale's i.MX6 Series Quad/Dual/Solo core processor running at 1GHz. A single ruggedized miniature SODIMM connector allows compact carrier board form factors which is ideally suitable for space constraint embedded applications.



Headquarters: INDIA

iWave Systems Tech. Pvt. Ltd.
7/B, 29th Main, BTM Layout 2nd Stage,
Bangalore-560076, India.
Ph: +91 80 26683700, 26786245
Fax: +91 80 26685200
Email: mktg@iwavesystems.com
www.iwavesystems.com

Our Partners Across The Globe

JAPAN

iWave Japan, Inc.

8F-B, Kannai Sumiyoshi Building,
3-29, Sumiyoshi-cho, Naka-ku, Yokohama,
Kanagawa, Japan.
Ph: +81 45 227 7626
Email: info@iwavejapan.co.jp
www.iwavejapan.co.jp

NETHERLANDS

Adelco Electronics

Venkelbaan 82
2908 KE Capelle a/d IJssel
The Netherlands
Tel: +31 10 2580580
Email: info@adelco.nl
www.adelco.nl

ITALY

BRELCO S.r.l.

Via Emilia 3
20853 Biassono - MB Italy
Tel: +39 039 2494280
Email: info@brelco.it
www.brelco.it

AUSTRALIA/NEWZEALAND

BRAEMAC

1/59-61 Burrows Road
Alexandria NSW 2015
Sydney, Australia.
Tel: +61 2 9550 6600
Email: nswsales@braemac.com.au
www.braemac.com.au

DENMARK/FINLAND

M-COMP A/S

Hecovej 6,
DK-8722 Hedensted.
Tel: +45 3067 3330
Fax: +45 9669 5001
E-mail: es@m-comp.dk
www.m-comp.dk

UK/IRELAND

BRAEMAC

Braemac House, 1 Mandarin Court,
Centre Park, Warrington, Cheshire. WA1 1GG.
Tel: +44 (0)1925 419090
E-Mail: sales@braemac.co.uk
www.braemac.co.uk

FRANCE

Sidou Software

11, Rue Emmanuel Mounier
78370 Plaisir.
France.
Ph: +33 1 83 62 08 59
Email: dradjou@iwavesystems.com
www.iwavesystems.com

BELGIUM & LUXEMBOURG

Adelco Electronics

Baan 6 B
2990 Wuustwezel
Belgium
Tel/Fax: +32 3 337 44 99
Email: info@adelco.be
www.adelco.be

USA

Victory Sales Corporation

405 N Calhoun Rd,
Ste 110, Brookfield WI 53005.
Tel: 414-333-2413
E-mail: dttriplett@victorysales.com
www.victorysales.com

NORWAY

ACTE AS

Vestvollveien 34B
2019 SKEDSMOKORSET, Norway
Tel: +47 6389 8900
Fax: +47 6387 9000
Email: info@acte.no
www.acte.no

ISRAEL

Proteus Systems Ltd.

49 Hasivim St., Bldg 1, 2nd Fl.,
Park Yanai, POB 7419,
Petach Tikva, Israel.
Tel: +972 3 6053308
Email: rami@proteus-sys.com
www.proteus.co.il

RUSSIA

Symmetron

195196 ul. Tallinskaya, d. 7
Saint Petersburg, Russia.
Tel: +7 (812) 449-4000
Email: spb@symmetron.ru
www.symmetron.ru

DACH REGION

ACTRON AG

Posthalterring 18
D - 85599 Parsdorf
Germany
Tel: +49 89 991509 0
Email: service@actron.de
www.actron.de

SINGAPORE

Spyro Technology

Blk 18D, Holland Drive, #15-431
Singapore 275018,
Tel: +65 6659 4328
Email: jktan@spyrotechnology.com
www.spyrotechnology.com

SWEDEN

ACTE Solutions AB

Box 4115, SE-171 04 Solna
Karlsbodavägen 20A, 3tr, Bromma
Tel: +46 8 445 28 00
Fax: +46 8 98 26 19
Email: info@actesolutions.se
www.actesolutions.se

KOREA

J.S Communications

#913, Dojung Tower, Anyang-ro 115,
Manan-gu, Anyang-si,
Gyeonggi-do, Korea
Tel: +82-31-349-9793
Fax: +82 3030 3444 9793
Email: scott.lee@jscoms.co.kr
www.jscoms.co.kr

TAIWAN

Ever Light Technology Limited

Rm. H. 4F., No.186, Jian 1st Rd,
Zhonghe Dist.,
New Taipei City 235, Taiwan (R.O.C.)
Tel: +886-933-858-791
Fax: +886-2-8227-2251
Email: eddie.hou@tweverlight.com

SPAIN

Novatronic Sistemas SI

C / Infanta Mercedes,
62 28020 Madrid, Spain.
Tel: +34 902 19 87 25
www.novatronicsistemas.com