深圳大经技术有限公司
Shenzhen Dajtech Co.,Ltd
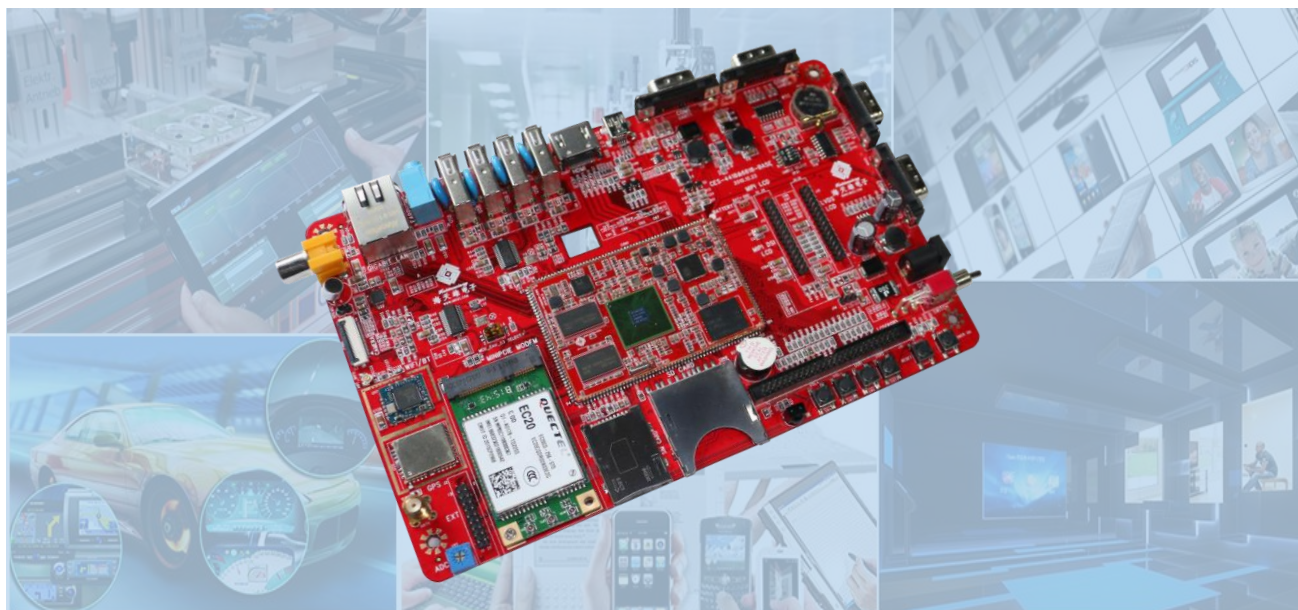
CES-6818
Product Manual

SAMSUNG Development Platform

Rev. V1.0

Date：2017-02-07

Introduction

CES-6818 development platform is a high-performance,low-power consumption embedded ARM motherboard,using Samsung's high-end mainstream ARM processor S5P6818, 64-bit Cortex-A53 octa-core CPU, frequency at 1.4 ~ 1.6 GHz. With 2 * 512KByte L2 cache, 28nm production process, equipped with Mali-400GPU, this platform has the features of high memory bandwidth, full HD display, 1080P hardware codec, high-speed interface, etc.
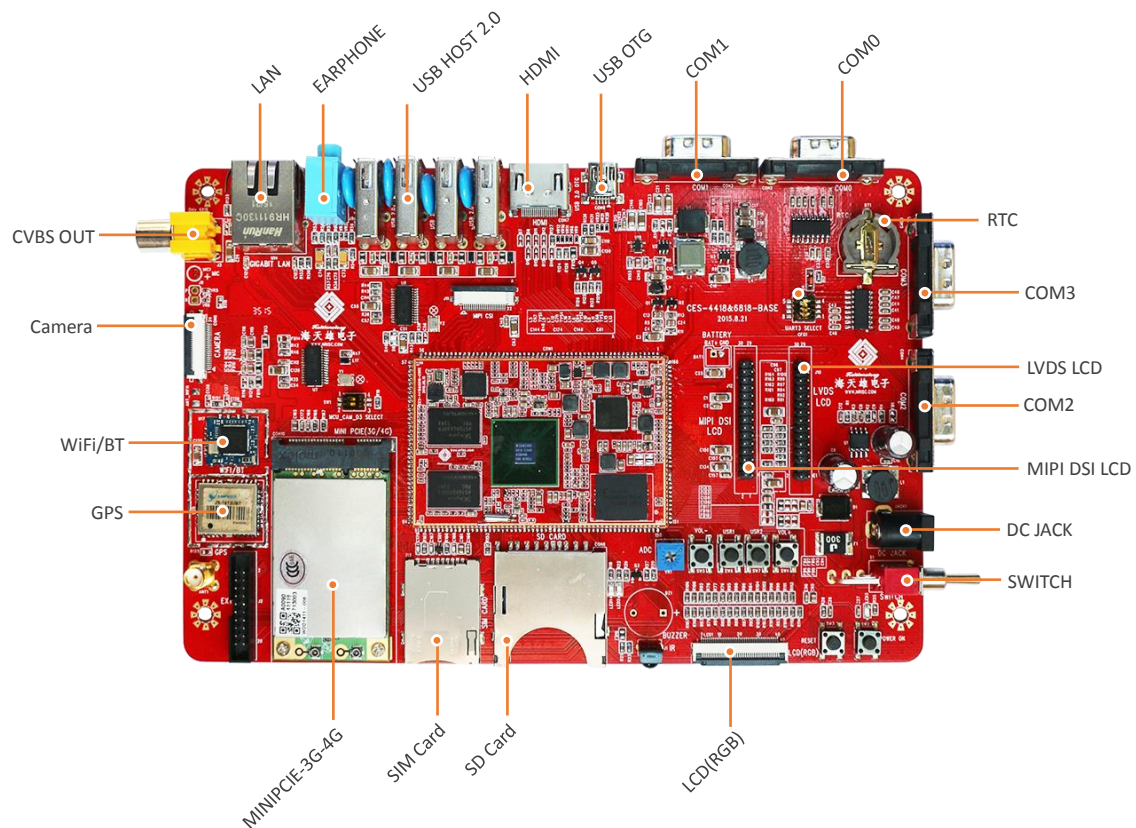
CES-6818 development platform is comprised of SOC module, base-plate, display driver board and development aids. SOC module integrates the key components such as S5P6818 processor, memory unit, EMMC storage unit, PMU power management unit and Gigabit Ethernet which can be used on target products directly so as to save both the development time and cost. Base-plate consists of functional units and expansion modules. The functional units include the commonly used UART serial data ports, universal serial data ports of USB master/slave devices, communication interfaces of I2C/ I2S/SPI, HDMI 1.4 HD output display, MIPI-DSI interface, LVDS and RGB dual display control interface, GPIO input and output functions. The expansion modules include the application-type functional modules such as 4Gmodule, WIFI module, Bluetooth module, camera module, GPS module and G-Sensor module.

CES-6818 development platform is equipped with a 10.1-inch capacitive touch LCD display, providing a complete development kit and software package. Rich resources and optimized software and hardware could meet the needs of most products.
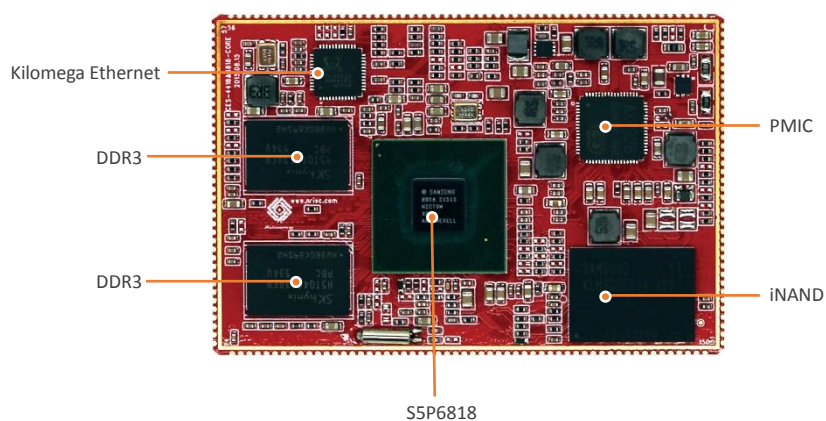
Features

- Samsung high-end mainstream ARM S5P6818 Cortex-A53 octa-core processor , the main frequency is 1.4~1.6GHz
- Standard 1GB DDR3 (optional for 1GB/2GB DDR3) and 8GB eMMC memory
- AXP228 power management chip. With the characters of stable, reliable and low power consumption, far more better than NXE2000
- On-board wired Ethernet, experience fast speed
- Support 4G, WiFi, GPS, Bluetooth, G-Sensor, Camera and other modules

Function Interface

Core Board

Hardware Parameter

CPU	Samsung Cortex-A53 S5P6818, 64-bit octa-core processor with a main frequency of 1.4 to 1.6 GHz, 2*512KB L2 cache
GPU	ARM Mail-400MP
Frequency	POWERVR SGX530 , Industry-standard API support
Memory	Standard 1GB DDR3, 800MHz, optional for 1GB or 2GB DDR3
eMMC	8GB eMMC
PMIC	AXP228
4G Module	MiNi PCIE interface with SIM card slot
WiFi/Bluetooth	Support 802.11b/g/n full format and Bluetooth communication
GPS	Tracking sensitivity -165dBm, capture sensitivity -148dBm
Camera Interface	On-board 1 channel 24pin camera interface
USB 2.0 HOST	On-board 4*USB Host2.0 host interface
USB OTG	On-board 1* USB OTG2.0 slave interface
SD/HSMMC	On-board 2*SDIO 2.0, draw out 1* SD/MMC card slot
UART Interface	On-board 4* COM0-COM4 UART serial ports, baud rate is 115200bps, used for GPS communication, common serial port,debugging information output, etc.
HDMI Interface	On-board 1* HDMI 1.4 (1080P/60Hz) HD interface
Video Output Interface	On-board 1*CVBS video output interface
Ethernet Port	On-board 1* Gigabit LAN slot, using RTL8211E Gigabit Ethernet PHY network chip

Audio Unit	ES8316/IIS interface, support for recording and broadcasting
Acceleration Sensor	On-board acceleration sensor 3-axis 2g/4g/8g 10bit, I2C interface
Function Buttons	Including power button, reset button, interrupt button, etc.
Infrared Sensor	IRDA serial communication
Buzzer	On-board 1*MMBT3904/SOT buzzer
Battery	On-board 1*button lithium battery for RTC using
Power	12V/5A DC power supply with power switch and indicator
Other Expansion Interfaces	MIPI DSI and LCD (RGB) which can be used to extract the signals required by the use

Software Parameters—Android5.1.1 Lollipop

OS	Android 5.1.1 Lollipop
Linux kernel	Linux 3.4.39
System Boot Program	U-boot 2014.07
Serial Debugging Tool	Minicom terminal
Cross Compilation Tool	arm-eabi-4.8(gcc4.8)
File System Format	Ext4
GUI	Android 5.1.1 Lollipop
4G	To achieve 4G Internet access and receive/send information
Wireless WiFi	Support 802.11b/g/n wireless protocol for WiFi wireless Internet access
BT	Support Bluedroid Bluetooth protocol stack for Bluetooth data communication

GPS	Enables acquisition and reception of positioning data
G-sensor	Support system interface rotation function
CMOS Camera	With image preview, photo and video functions
Network Port Module Driver	Gigabit wired Ethernet
HDMI Driver	Support HDMI audio and video output
Audio Driver	Implement audio playback
LCD Display Driver	Supports 10.1" LCD display and backlight adjustment
Touch Driver	Support capacitive multi-point touch driver
USB HOST Driver	Support the read function of USB mouse, USB keyboard, U disk
USB OTG Driver	Support for ADB and MTP functions
Keypad Driver	Support 4 GPIO keypad functions
SD/MMC Driver	Supports 32GB SD card memory's read and write operations
RTC Driver	Support
UART Driver	Support debugging and communication serial port functions
MFC Codec Driver	Supports codec functions of H.264, MPEG4, H.263, and MJPEG
PPM Driver	Support infrared receiving function
BEEP Driver	Support buzzer control function
LED Indicator Driver	Support indicator control function
ADC Driver	Support ADC value reading function
USB Camera Driver	Support USB camera's preview and photo function

Software Parameters——Linux3.4

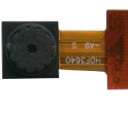|	
OS	Linux3.4
Linux kernel	Linux 3.4.39
System Boot Program	U-boot 2014.07
Serial Debugging Tool	Minicom terminal
Cross Compilation Tool	arm-eabi-4.8(gcc4.8)
File System Format	Ext4
GUI	QT5.5
Video Player	MPlayer
Wireless WiFi	Support 802.11b/g/n wireless protocol for WiFi wireless Internet access
Network Port Module Driver	Gigabit wired Ethernet
Audio Driver	Implement audio playback
LCD Display Driver	Supports 10.1-inch LCD display and backlight adjustment
Touch Driver	Support capacitive multi-point touch driver
USB HOST Driver	Support the read function of USB mouse, USB keyboard, U disk
USB OTG Driver	Support for ADB and MTP functions
Keypad Driver	Support 4 GPIO button functions
SD/MMC Driver	Supports 32GB SD card memory's read and write operations
RTC Driver	Support
UART Driver	Support debugging and communication serial port functions

MFC Codec Driver	Supports codec functions of H.264, MPEG4, H.263, and MJPEG
PPM Driver	Support infrared receiving function
BEEP Driver	Support buzzer control function
LED Indicator Driver	Support indicator control function
ADC Driver	Support ADC value reading function
USB Camera Driver	Support USB camera's preview and photo function

Software Parameters——Ubuntu12.04

OS	Ubuntu12.04
Linux kernel	Linux 3.4.39
System Boot Program	U-boot 2014.07
Serial Debugging Tool	Minicom terminal
Cross Compilation Tool	arm-eabi-4.8(gcc4.8)
File System Format	Ext4
GUI	QT5.5
Video Player	Movie Player
Music Player	Rhythmbox
Wireless WiFi	Support 802.11b/g/n wireless protocol for WiFi wireless Internet access
Network Port Module Driver	Gigabit wired Ethernet
Audio Driver	Implement audio playback

LCD Display Driver	Support 10.1" LCD display
Touch Driver	Support
USB HOST Driver	Support the read function of USB mouse, USB keyboard, U disk
Keypad Driver	Support 4 GPIO button functions
SD/MMC Driver	Supports 32GB SD card memory's read and write operations
RTC Driver	Support
UART Driver	Support debugging and communication serial port functions
USB Camera Driver	Support USB camera's preview and photo function

Package List

	Development Platform (expanding board+Core board)		User CD
	10.1-inch LVDS Interface HD Capacitive Display 1280*800 pixels		Serial line
	Cable		Touch Pen
	USB line		10.1-inch LVDS Interface Capacitive Display 1024*768 pixels 10.1-inch MIPI Interface Capacitive Display 1920*1200 pixels（Optional）
	Power Adapter		Camera（Optional）
	SD card（Optional）		4G Module（Optional）

Service Support

Technical Support Mailbox：

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E-mail：ces_support@ces-tech.com

Technical Support Service Hours：

Monday to Friday：9：00～12：00，13：30～18：00

Statement

The information in this manual is for reference only and is subject to change without notice.

For more product information, visit www.nrisc.cn

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