深圳市海天雄电子有限公司
Shenzhen Haitianxiong Electronic Co., Ltd.

CES-EDU5260

Product Manual

Cortex-A15 Teaching Experimental Platform

Rev. V1.0

Date：2016-06-17

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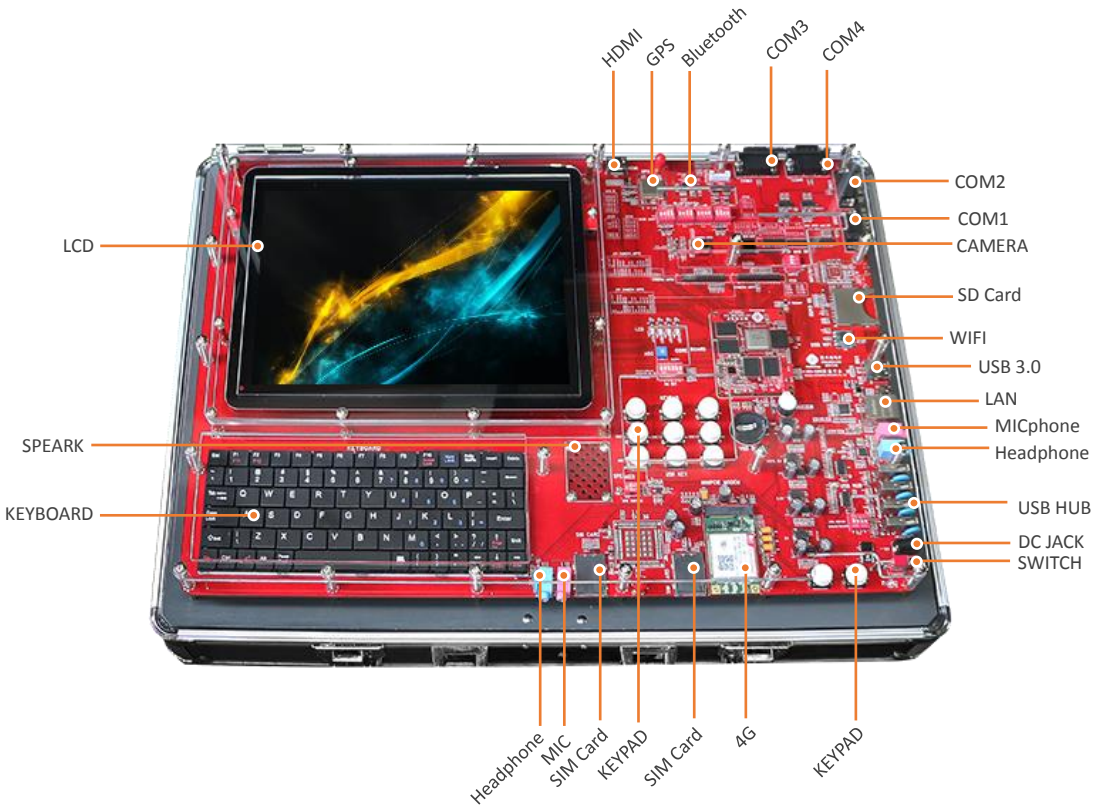
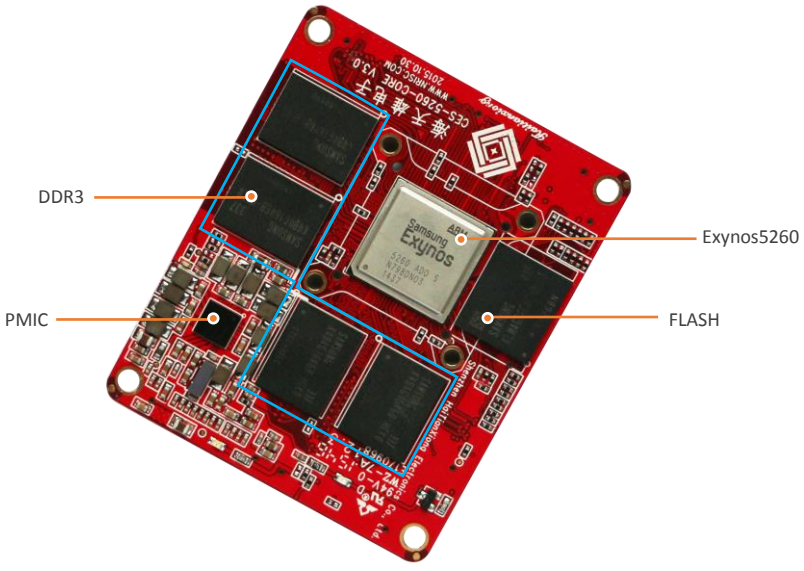
Introduction

CES-EDU5260 teaching platform is based on Exynos5260, the latest 32bit ARM Cortex-A15 six-core processor with 1.7GHz frequency. It is configured with operating systems: Android 4.4.2 and Linux 3.4.39. This platform can not only inform students the development trend of embedded technology, but also help them learn cutting-edge embedded technology as well as master the core embedded technology. It is designed to provide both theoretical and practical platform to colleges and universities to train high-end technical talents in embedded hardware and software areas. It realizes the teaching idea that talents trained by colleges and universities are the technical talents enterprises need.

CES-EDU5260 teaching platform provides open software resources. By using this platform, students can acquire technical knowledge, including bottom-level chip, mid-level system, and upper-level application, as well as independent R&D capability for products. Meanwhile, according to requirements of university experimental outline and advice of academic experts, this platform is also equipped with Embedded Cortex-A15 Advanced Experimental Tutorial as teaching materials.

Function interface





Hardware parameters

CPU	Samsung Exynos5260 ,Dual-core Cortex-A15+Quad-core Cortex-A7 ,1.7GHz frequency
RAM	2GByte，Samsung K4B4G1646Q DDR3 memory chip, 1600MHz frequency
FLASH	16GByte，Samsung KLMAG2GEAC iNAND chip
PMU	S2MPA01 PMU
4G	Support ZTE SIM7100C chip，PCI MINI Care interface
WiFi	Support IEEE802.11b/g/n 协议，SDIO interfaces
GPS	Support SID III global positioning，UART serial data interface
Bluetooth	For high-speed Bluetooth communication
Camera	800 million pixel camera, using Samsung S5K3H7 camera module
LCD	Platform configuration 9.7 inch capacitive touch LCD screen, pixel 2048 * 1536, LED backlight
Ethernet	10M/100M Ethernet interface，DM9621ANP ethernet chip
Audio	IIS signal，WM8976 HQ chip, with amplifying circuit and loudspeaker
HDMI	1 channel HDMI interface
UART	4 channel UART interface
SD/HSMMC	For SD card and WIFI
USB interface	4 channel USB2 .0，1 channel USB 3.0
I/O interface	Leads to IO pins for controlling and interrupting
IRDA	1 group infrared detection device
RTC	Internal real-time clock (with back up lithium battery)
External Power	AC220 DC12V/5A power adaptor
Installation method	The base board is fixed on the supporting plate of the experimental case by retaining screw, and covered by Acrylic transparent plate to avoid damage by constant use of students.
Size	51*38*15CM

Software parameters——Android 4.4.2

Operating system	Android 4.4.2
Kernel	Linux 3.4.39
Bootloader	U-boot2012.07
Terminal	DNW V1.01（XP）、Minicom（Ubuntu）
Cross Compiler	Arm-2009q3（gcc4.4.1）
File System	Ramdisk，Ext4
GUI	Android 4.4.2
4G Module	4G driver for web browsing, message sending and receiving
WiFi Module	Support 802.11b/g/n
Bluetooth Module	Supports Serial Bluetooth Driver(RDA) for Bluetooth data communication and files transfer
Camera Module	Supports MIPI Camera driver and functions include preview, photographs, video, etc. Source programs are provided. Source codes are provided
GPS Module	UART serial data interface for SIF III global positioning
Ethernet	10M/100M adaptive network port driver for Web-surfing. Source programs are provided
HDMI Driver	Supports HDMI output with image and voice. Source programs are provided
AUDIO Driver	I2S communication protocol for audio presentations. Source programs are provided
LCD Driver	Support 10.1-inch MIPI screen(1920*1200) and 9.7-inch eDP screen(2048*1536)
TOUCH Driver	I2C communication protocol for capacitive multi-touch. Source programs are provided
I2C Driver	For Camera、HDMI、PMIC
USB HOST 2.0 Driver	Support U-disk, USB mouse, USB keyboard, etc. Source programs are provided
USB OTG 2.0 Driver	Support ADB and MTP functions. Source programs are provided
USB HOST 3.0 Driver	Support dual-channel communication with both OTG and HOST functions
Keypad Driver	Support buttons for volume control
SD/MMC Driver	Support maximum 32GB software. Source programs are provided

UART Driver	4 UART interfaces for serial debugging and serial communication
MFC Driver	Multi-Format Video Codec
JPEG Driver	JPEG CODEC
2D Driver	2D hardware acceleration
3D Driver	3D hardware acceleration（Mali-T628 MP3）
FIMC Driver	Support V4L2 video image processing
GPIO Driver	Interface for connection with outside GPIO and interruption
IRDA Driver	Support SIR
RTC Driver	Support real-time clock
G-Sensor Driver	Support G-Sensor Driver
SPI Driver	Support SPI protocol
IP Camera	Support video, 24-hour real-time monitoring, alarm monitoring

Software parameters——Linux 3.4.39

Operating system	Linux 3.4.39
Kernel	Linux 3.4.39
Bootloader	U-boot2012.07
Terminal	Arm-2009q3（gcc4.4.1）
Cross Compiler	DNW V1.01（XP），Minicom（Ubuntu）
File System	Ext4
GUI	QT4.8.5
WiFi Module	Support 802.11b/g/n
GPS Module	Supports SIF III global positioning
Ethernet Module	10M/100M adaptive network port driver for Web-surfing. Source programs are provided

Audio Driver	Support audio display
LCD Display	Support 10.1-inch MIPI screen (1920*1200) and 9.7-inch eDP screen (2048*1536)
TOUCH Driver	Single-point capacitive touch
I2C Driver	Audio I2C driver programs are provided
USB HSIC Driver	Host Driver, supports external USB devices like mouse, keyboard, U-disk, Bluetooth, etc
USB OTG Driver	Host/Device Driver. Host function supports for USB devices while Device function for ADB and MTP
USB 3.0 Driver	Host/Device Driver
MMC Driver	Support high-speed SD/MMC card and SDIO
MFC Driver	Multi-Format Video Codec
UART Driver	Serial communication driver
JPEG Driver	JPEG CODEC
2D Driver	2D hardware acceleration
3D 驱动	3D hardware acceleration（Mali-T628 MP3）

Product configuration list

	User CD		Power adapter
	Experimental tutorial		Touch pen
	Serial line		Camera (optional)
	cable		4G module (optional)
	USB cable		SD card (optional)
	USB to serial port		IP Camera (optional)

Service Support

Technical Support Contact:

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

Disclaimer

This manual information is for reference only, and is subject to change without notice.

For more product information, please visit www.nrisc.com

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