



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

CES-EDU5260A

Product Manual

Android Teaching Experimental Platform

Rev. V1.0

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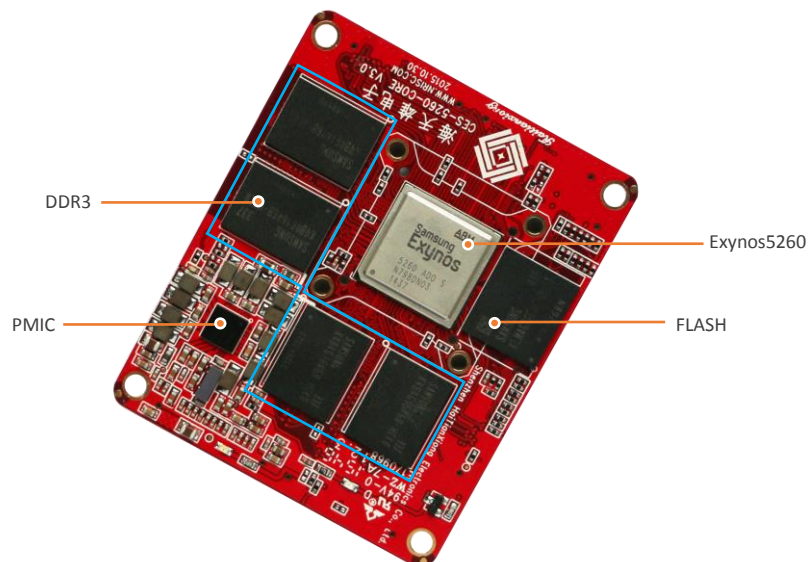
Introduction

Android is becoming the number one intelligent terminal system in the era of mobile internet, causing a great demand for Android developers. More and more colleges and universities arranged android classes in the teaching plan of information professional. In order to meet the teaching needs, Haitianxiong Electronic developed the third generation of CES-EDU5260A teaching platform combined with the actual product development experience.

CES-EDU5260A teaching platform using the Samsung multi-core ARM processor (2 *Cortex-A15 +4* Cortex-A7), running Android 4.4.2 operating system with Linux 3.4.39 as the kernel, integrating LAN, 4G, WiFi, GPS, BT and other communication modules. Open UART, USB, LCD, SD, OTG, camera and other peripherals, with buttons, GPIO, LED lights, ADC / DAC, amplifier and other practical circuits, and with infrared detection, G-Sensor gravity sensor. Combined with MIPI, eDP, HDMI and other different displays, it is perfect in Android development and experimental teaching.

CES-EDU5260A teaching experiment platform offering "Android embedded system" course, "Android network communication" course, "Android application development foundation" course, "Android 2D game development foundation" course, "Android 3D game development foundation" course, "Mobile computing" course, as well as part of the image processing and other related courses. Rich teaching resources including syllabus, teaching progress, curriculum PPT and experimental projects, are especially suitable for college teaching and personal learning.

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/HSMHC	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

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

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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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