

DevKit7000 Evaluation Kit

- *Samsung S5PV210 Processor based on 1GHz ARM Cortex-A8 core*
- *Onboard 512MByte DDR2 and 512MByte NAND Flash*
- *4 UART, 4 USB Host, USB Device, Ethernet, Audio, TF, RTC,...*
- *Supports TFT LCD and HDMI Display*
- *Supports Camera, WiFi Functions through Modules*
- *Supports for Android 2.3 and WinCE 6.0 OS*



Overview

The Samsung's S5PV210 ARM Cortex-A8 is world's first Cortex-A8 based application processor in 45nm LP process that runs at 1GHz. It provides state-of-the-art 3D performance and a rich collection of multi-media support while achieving the lowest power consumption and integrates a 1080p full HD codec engine that supports 30fps full HD video playback and recording. The S5PV210 is aimed at portable computing devices such as netbooks that demand high performance and design flexibility.

Embest DevKit7000 Evaluation Board is a high-performance development board based on the Samsung S5PV210 processor, with onboard 512MByte DDR2 RAM and 512MByte NAND Flash. It takes full features of this application processor and the board exposes many other hardware interfaces including 4 UARTs, 4 USB Host and 1 USB OTG, Ethernet, TF card, Camera, SD/MMC, SPI, I2C, ADC, PWM and more over. It can support 1080p high-definition video display and TFT LCD display with touch screen running popular Google Android system.

Embest DevKit7000 Evaluation Kit includes the DevKit7000 evaluation board with 7" LCD and touch screen and all necessary accessories to help users start their development conveniently. It is preloaded with Android 2.3 OS in NAND flash but it can also boot from TF card following

Embest instructions. It can also support for WinCE 6.0 OS. Embest provides user manual, schematic drawing, datasheet documents and software BSP to help customers better understand and use the kit.

Optional Function Modules

Additionally, Embest offers various optional function modules for DevKit7000. At present, the WiFi (WF8000-U) and Digital Camera (CAM8000-D) modules are available for DevKit7000. And Embest will release more other modules in the future.



USB WiFi Module

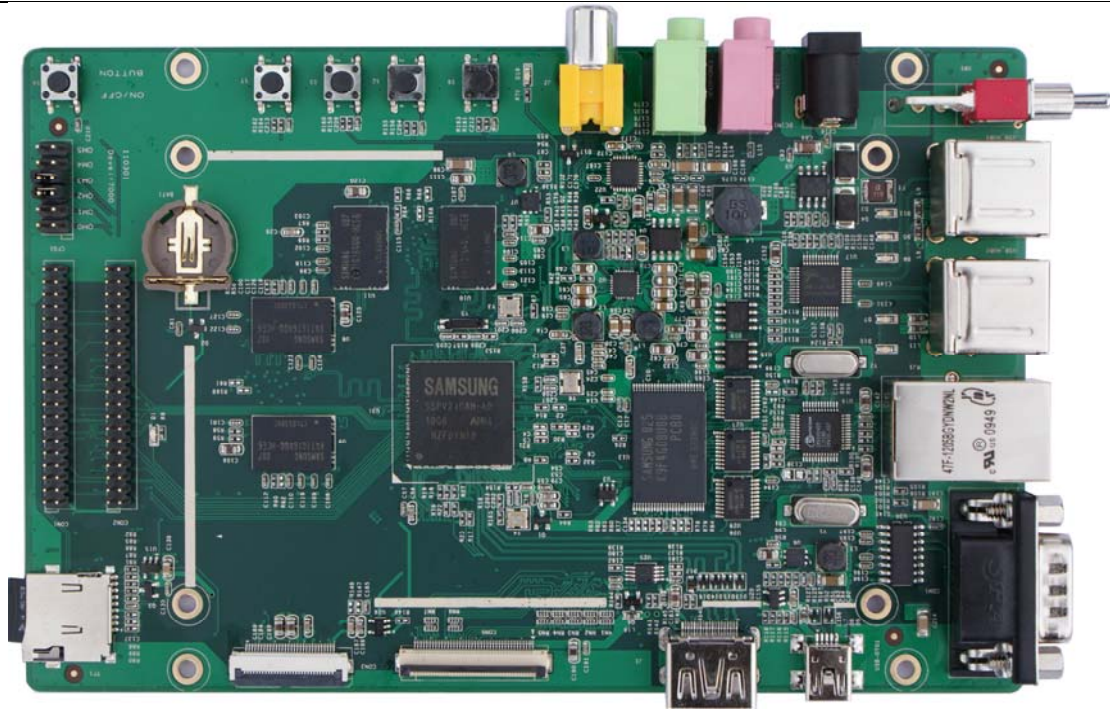


Digital Camera Module

Hardware Features

The Samsung's S5PV210 mobile application processor is powered by up to 1-GHz (also support 800-MHz operation) ARM Cortex-A8 core in 45nm LP process and provides state-of-the-art 3D performance and a rich collection of multimedia support, while achieving the lowest power consumption. It comes with 32KB data and 32KB instruction caches, and is equipped with a 512KB L2 cache. With the 1GHz clock speed and large size L2 cache, this processor enables real-time applications such as web browsing and user interface (UI) to run smoothly with a fast response time. In addition, it integrates a 1080p full HD codec engine that supports 30fps full HD video playback and recording. A built-in HDMI1.3 interface allows output of captured or downloaded mobile multimedia contents to an external high definition digital display. It is packaged in a 0.65mm pitch, 17X17mm² FBGA package with a high performance 2-channel 32-bit DDR2 memory interface that is essential for computing devices.

The DevKit7000 Evaluation board is based on S5PV210 processor and takes full features of the processor. This board is characterized as follows:



Processor

- Samsung S5PV210 Mobile Application Processor
- Up to 1-GHz ARM® Cortex™-A8 Core with NEON, also supports 800-MHz operation
- 32KB I-Cache; 32KB D-Cache; 512KB L2 Cache
- Onchip 64KB ROM and 96KB SRAM

Memory

- 512MByte DDR2, 32bit
- 512MByte NAND Flash, 8bit

Audio/Video

- TV Out display interface
- HDMI high-resolution image output port (Type A, support 1080p, 30fps signal)
- Audio input interface
- Two-channel audio output interface
- TFT LCD interface, 24-bit true color (40-pin FPC connector)
- 4-line Touch Screen interface
- Camera interface (30-pin FPC connector, support CCD or CMOS camera)

Data Transfer Interface

- Serial port:
 - 2 x 5 line serial port, TTL voltage (bring out to extension interface)
 - 2 x 3 line serial port, RS232 (One brings to DB9 connector, the other brings to extension interface)
- USB port:
 - 1 x USB2.0 OTG (can only be configured as Device), High-speed, 480Mbps
 - 4 x USB2.0 Host, High-speed, 480Mbps
- TF card slot
- Ethernet: 10/100Mbps, RJ45 connector
- Two 2.0mm space 2*20pin Extension Interfaces to bring out:
 - 2 channel SPI;
 - 2 channel PWM;
 - 3 channel I2C;
 - 6 channel 12-bit ADC;
 - 2 channel SD/MMC
 - 16 GPIOs (can extend 8*8 keyboard)

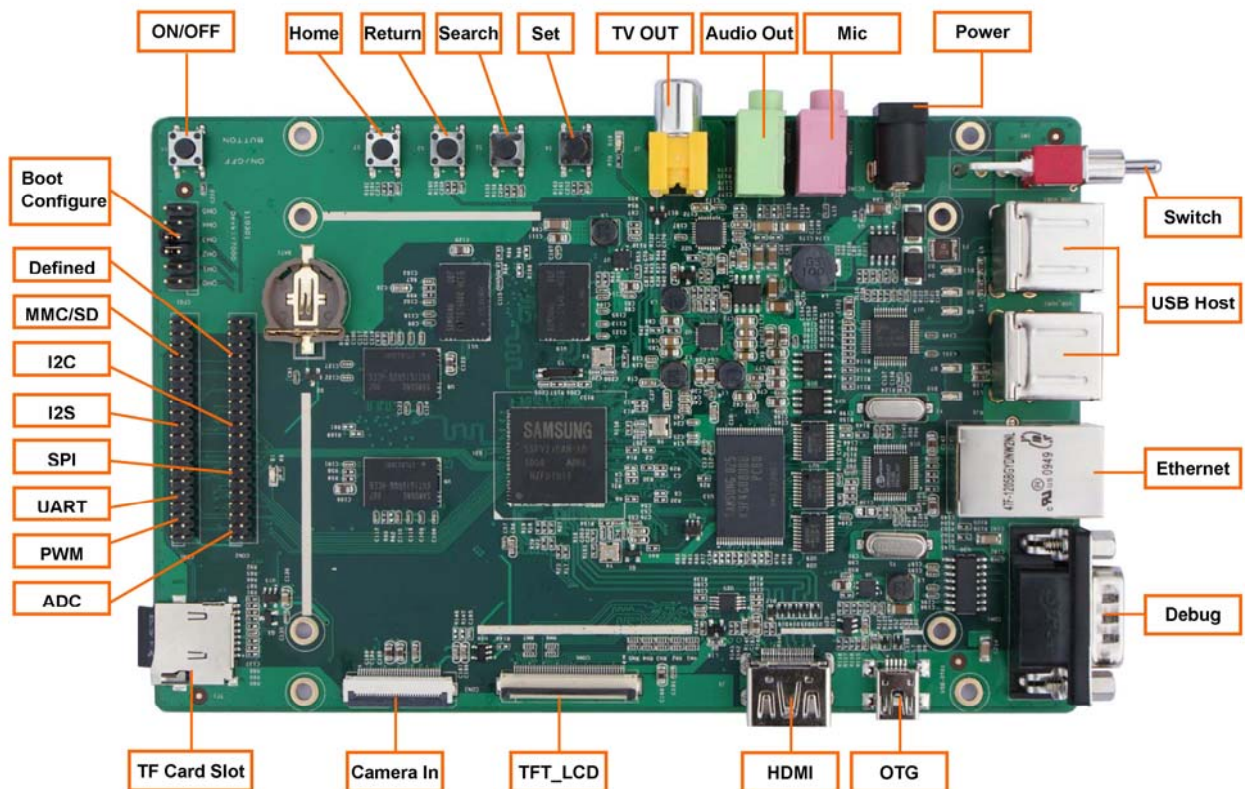
Input Interface

- One On/Off button
- Four USER buttons

Mechanical Parameters

- Dimensions: 166 mm x 107 mm
- Input Voltage: +12V
- Working Temp.: 0 °C ~ 70 °C
- Humidity Range: 20% ~ 90%

Interface Introduction



Software

The DevKit7000 Evaluation board provides Android 2.3 and WinCE 6.0 BSP, with steady-going drivers, many of which are all in source code. Please refer to below table.

OS	Item		Remark	
Android	Boot	u-boot 1.3.4	NAND (Yaffs)	
			TF card (EXT4)	
	Kernel	Linux 2.6.35	Supports ROM/CRAM/EXT2/EXT3/EXT4/FAT/NFS/ JFFS2/UBIFS file systems	
	Device Driver	Serial port, RTC, Ethernet, Nand Flash, LCD, Touch screen, TF card, USB Device, USB hub, Audio input/output, HDMI, Button, Camera, WiFi		
WinCE	GUI	Android 2.3		
	BIOS	Steploader	UART	
			NAND	
			SD/MMC	
		e-boot	UART	
			NAND	
			SD/MMC	
	OAL	KILT (USB RNDIS & USB serial)		
		Boot parameter		
		RTC		
		System timer		
		Interrupt controller		
		MMU		
		Serial Debug Port		
		Kernel Profiler-use timer2		
		Library Abstractions (GPIO abstractions)		
		Power management		
		Device Driver	Audio (I2S and AC97), Backlight, Battery, Camera, CEC, CMM (codec memory management), Display, I2C, IROM BOOT, JPEG, Keypad, MFC (Multi-Format Codec, MPEG2, MPEG4, H.263, H.264, VC-1), Nand Flash, NLED, OTG, Power Button, Power Control, SD/MMC, Serial, SPI, Touch Screen, TVOUT (HDMI and Composite Video), USB EHCI, USB OHCI, DM9000 NDIS	

Order Information

Order No.	T6010150
Item	DevKit7000 Evaluation Board
Deliveries	<ul style="list-style-type: none">• One DevKit7000 Evaluation board• One Product DVD (including user manual, schematic in PDF format, datasheet, Android 2.3 BSP)
Order No.	T6010151
Item	DevKit7000 Evaluation Kit Standard Configuration
Deliveries	<ul style="list-style-type: none">• One DevKit7000 Evaluation board• One 7" LCD (with touch screen, resolution: 800*480 pixel)• One 2GB TF card• One Serial cable (DB9-DB9)• One 12V Power adapter• One USB cable• One Cross Ethernet cable• One HDMI cable• One Product DVD (including user manual, schematic in PDF format, datasheet, Android 2.3 BSP)
Options	<ul style="list-style-type: none">• USB WiFi Module (WF8000-U)• Digital Camera Module (CAM8000-D)
Price	Please contact us.

More information about this product can be found at:
<http://www.embedinfo.com/english/Product/devkit7000.asp>
<http://www.armkits.com/Product/devkit7000.asp>

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