# 2010

## StrongTech LPC3250EVB 使用手册



Guangbao Xie

China

2010-6-20

### StrongTech LPC3250EVB 使用手册

#### 目录

StrongTech LPC3250 EVB介绍4
LPC3250 MCU介绍4
板载资源描述5
跳线设置说明6
LED指示说明6
按键说明7
LPC3250 开发板实物图
<i>板载</i> bootloader使用9
Kickstart和S1L介绍9
Kickstart和S1L烧写及升级11
通过已烧写完成的S1L对KickStart&S1L升级11
通过JTAG仿真器14
通过UART5 (LPC3250 Loader Utility)18
在非操作系统下使用
使用板载S1L运行应用程序22
通过JTAG在RAM中运行程序26
WinCE 下使用
Eboot.nb0 和NK.bin的生成29
安装VS2005 + PB6.0 environment29
安装NXP LPC3250 BSP29
建立Wince工程编译生成Eboot.nb0 和NK.bin。29

配置S1L引导Eboot	
S1L从SD卡加载Eboot	42
S1L从NandFlash加载Eboot	44
启动WinCE	47
通过以太网卡启动WinCE	47
通过SD启动WinCE	55
通过NAND Flash 启动WinCE	56
LPC3250EVB器件位置图	59
LPC3250 核心板	59
LPC3250 底板	59
参考文件	60
版本说明	61

StrongTech LPC3250 EVB 介绍

#### LPC3250 MCU 介绍

恩智浦 LPC32x0 系列产品采用 90-nm、208-MHz ARM926EJ-S CPU 内核和矢量浮点(VFP)协 处理器设计而成,适合于需要高性能、高集成度和低功耗的应用。

主要特点:

- ▶ 208-MHz、32 位 ARM9EJ-S, 带嵌入式跟踪模块(ETM);
- ▶ 矢量浮点协处理器;
- ▶ 低功耗模式下可在低至 0.9V 电压下工作的 90-nm 工艺;
- ▶ 高达 256KB 的内部 SRAM 和 32KB 指令高速缓存/32 KB 数据高速缓存;
- ▶ DDR 和 SDR SDRAM、SRAM 以及 Flash 外存储器控制器;
- ▶ 可选择从不同的外部设备中启动: NANDFlash、SPI 存储器、UART 或静态存储器;
- ▶ 10/100 Ethernet MAC 接口, 带专用 DMA 控制器 (仅 LPC3240 & LPC3250);
- ▶ USB OTG 接口,能连接全速主机和器件;
- ▶ 带专用 DMA 控制器的 24-位 LCD 控制器支持 STN 和 TFT 面板 (仅 LPC3230 & LPC3250);
- ▶ 三通道、10 位 A/D 转换器,带触摸屏接口;
- ▶ 各种串行接口 (2 个 l₂S、2 个 SPI、2 个 SSP、2 个 l₂C-总线和7 个 UART);
- ▶SD 存储卡接口;
- ▶6个32-位定时器、看门狗定时器、11个PWM通道和具有独立时钟和功率域的RTC;
- ▶8 通道、通用 DMA 控制器;
- ▶8x8键的键盘扫描接口,高达87个通用IO口;
- ▶JTAG 接口,带仿真跟踪缓冲区;
- ▶ *内核电压* = 1.2 V, I/O = 1.8、2.8 和 3.0V;
- ▶ TFBGA296 封装 (15 x 15 x 0.8 mm)。

#### 板载资源描述

MCU: LPC3250, 主频208MHZ。

存储器: SRAM--256K

SDRAM--64M

NorFlash--2M

NandFlash--64M

通用串口: UART1--高速串口, 波特率高达 921600bps;

- UART3--9 线全功能串口,波特率高达 460800bps;
- UART5-- DEBUG 串口, 波特率高达 460800bps;
- 网络接口: 1x10M/100M 网口;

USB 接口: 1x USB OTG 接口; 1x USB Host 接口;

红外通讯口: 1x IRDA 红外线数据通讯口;

音频接口: 1x采用 IIS 接口芯片 UDA1380,一路立体声音频输出接口可接耳机或音箱;

12C: 1x 总线温度传感器 SA56004;

1x2K I2C EEPROM AT24C02;

SPI: 1x256K SPI EEPROM AT25256AN;

*SD 卡接口: 1xSD* v1.01 *接口;* 

TFT LCD&Touch 接口: 50PIN LCD 接口;

RTC: LPC3250 内部 RTC, 支持外部电池供电;

LED: 4 个 IO 控制的 LED 指示灯;

按键: 1x 复位按键;

9x 3\*3 矩阵键盘;

蜂鸣器: 1x 压电蜂鸣器;

调试及下载接口:标准20pinJTAG接口;

供电电源: DC 12V;

跳线设置说明

JP1: OPEN: Disable UDA1380 Reset

CLOSE: Enable UDA1380 Reset(default)

JP2: Short:HOST ONLY

**Open:DEVICE** 

JP4: OPEN: Disable BEEP

CLOSE: Enable BEEP

JP5: OPEN: Bootloader 启动后从读取 SPI 系统参数

CLOSE: Bootloader 启动后读取默认参数

JP6: OPEN: Boundary scan

CLOSE: JTAG select

JP7: OPEN: Normal Boot:SPI Boot->EMC Boot->NAND FLASH Boot

CLOSE: Service Boot:UART5 Boot

#### LED 指示说明

D3: On: 电源供电

Off:无电源供电

D4: On: 以太网100M 模式

*Off: 以太网10M 模式* 

D5: On: 以太网全双工模式

Off: 以太网半双工模式

P1 (绿): On: 以太网连接

Off: 以太网未连接

P1 (橙):) Blink: 以太网数据传输中

按键说明

S1~S9: 3×3 矩阵键盘

S10: 复位按键



板载 bootloader 使用

板载 bootloader 分为 kickstart loader 和 stage 1 application loader (以下简写 S1L)两部分组成, KickStart 和 S1L 并不是必须的,在实际应用中,开发者也可直接编写自己的 Bootloader 直接引导 Eboot、Uboot 或者应用程序。

Kickstart 和 S1L 介绍

引自: NXP 应用文档 phy32xx\_bl.pdf。

由于LPC3250 内部ROM 的 NandFlash 引导程序无坏块检测功能, NANDFlah 仅有 BlockO 是确保无问题的 Flash, Kickstar 程序被保存在 NandFlash 的 BlockO 用来加载存放在 Block 开始的 S1L 程序, KickStart 主要功能如下:

• Allows loading images greater than 1 block length (stage 1 application) (An image

of about 54K is the maximum size that can be booted with the LPC3250 boot ROM)

• Loads stage 1 applications into internal RAM (IRAM) at address 0x0

S1L 主要功能如下:

- Register and memory change and dump
- o Poke, peek, dump, fill
- Image load via a serial port , SDMMC card, or FLASH
- o Supports raw binary and S-record files
- o Images can be executed after loading
- o Images can be saved in FLASH
- NAND FLASH support
- o Erase of NAND blocks
- o Direct read and write of FLASH blocks and pages
- o Bad block management
- o Reserved block management for operating systems
- MMU functions
- o Data and instruction cache control

- Virtual address translation enable/disable
- o Virtual address remapping
- *◦* Page table dump
- System support functions
- o Baud rate control, clock control, system information
- Automatic load and run support
- $\circ~$  Automatic load and execution of images from FLASH, SDMMC, or via the terminal

Kickstart 和S1L 烧写及升级

通过 Keil, IAR, GNU (CodeSourcery), RVDS 编译生成 kickstart.bin 和 s11.bin, 注意 kickstart.bin 一定要小于 15.5K, S1L.bin 要小于 240K, Kickstart 和 S1L 烧写及升级可通过如下三种方法。

通过已烧写完成的 S1L 对 KickStart&S1L 升级

*Step1: 打开串口工具 Tera Term Pro (设置为 115200-8-n-1-n),将 PC 串口与开发板 UART5 通过 交叉线连接。* 

📕 Ter	a Term - COM2	VT	
<u>F</u> ile <u>E</u>	Tera Term: Se	erial port setup 🛛 🔀	
	<u>P</u> ort: <u>B</u> aud rate:	СОМ2 • ОК 115200 •	
	<u>D</u> ata:	8 bit  Cancel	
	P <u>a</u> rity:	none	
	<u>S</u> top:	1 bit 💌 Help	
	<u>F</u> low control:	none 💌	
	Transmit delay	/ / <u>c</u> har 0 msec/ <u>l</u> ine	

Step2: 开发板上电启动,在Tera Term Pro 中键入任何键停止 S1L 自动引导。

Iera Ierm - COM1 VT	
<u>F</u> ile <u>B</u> dit <u>S</u> etup C <u>o</u> ntrol <u>W</u> indow <u>H</u> elp	
5 Phytec LPC0250 board Build date: Dec 4 2008 11:44:18 Autohoot in progress, press any key to stop phy8250>	

Setp3: 在 Tera Term Pro 中键入 "load term raw 0x80000000" 回车运行。



Step4: 以 binary 格式发送 S1L.bin 到串口。

	Jera Term	- COM1 VI				
Iteret	Tera Tern:	Send file			? 🔀	
5 P	查找范围(L):	🛅 BOOTLoader	•	🗢 🗈	📸 🎫 -	^
A	keil_s11.b	in				
P	🖬 kickstart.	bin				
2						
	文件名 (M):	keil_s11. bin			打开(0)	
	文件类型 (T):	all		•	取消	
					帮助()()	
	E Option		-			
	Bi	inary				
						~

Step5: 按ALT+B 完成文件发送。

🕮 Tera Term - CONI VT	
<u>F</u> ile <u>E</u> dit <u>S</u> etup C <u>o</u> ntrol <u>W</u> indow <u>H</u> elp	
5 Phytec LPC3250 board Build date: Dec 4 2008 11:44:18 Autoboot in progress, press any key to stop phy3250>load term raw 0x80000000 Starting terminal download, send break to stop	
phy3250>	
	~

Step6: 键入 "update" 完成 S1L 的升级。



Step7: (操作同 step5~step7)在Tera Term Pro 中键入"load term raw 0x80000000"回车,以 binary 格式发送 Kickstart.bin 到串口,按ALT+B 完成文件发送。

Step8:键入 "update kick" 完成 Kickstart.bin 的升级。

#### 通过JTAG 仿真器

 Step1: 打开串口工具 Tera Term Pro (设置为 115200-8-n-1-n),将 PC 串口与开发板 UART5 通过

 交叉线连接。

🗏 Tera	a Term - COM2	VT		
<u>F</u> ile <u>E</u>	Tera Term: Se	erial port se	tup 🛛 🔀	
	<u>P</u> ort: Baud rate:	COM2	ОК	^
	— <u>D</u> ata:	8 bit 💌	Cancel	
	P <u>a</u> rity:	none 💌		
	<u>S</u> top:	1 bit 💌	Help	
	<u>F</u> low control:	none 💌		
	Transmit delay	l <u>c</u> har <mark>0</mark> mse	c/line	
				~

Step2:编译生成kickstart.bin 和 S1L.bin。

Step3: 开发板上电, 通过JTAG 在 RAM 中运行 S1L。

🕎 phy3250_s11 - 礸 ision3 - [Disassembly]					
R Eile Edit View Project Debug Flash Peripherals Tools SVCS Window Help	_ & ×				
🎦 😂 🖬 🕼 🕄 ユ 🗅 律 律 み % % 後 🙀 🗔 🛃 🛃	dH				
않 💷 🚳 🗗 🖓 🗘 💠 🔛 🏟 🐽 🖄 🕸 🕫 🕅 🖗 🖓 🗡					
Project Workspace 74: B arm926ejs_reset_handler	; Rese 🔨				
Register Value 75: arm926ejs_under	reset (I				
R0 0x40038008	>				
	🖹 <u>Q</u>				
× FUNC void SetupForStart (vo 🔺 × Name 🛛 × Address: 0x10c					
PC = 0x0; Tera Term - COM1 VT					
Eile Edit Setup Control Window Help					
Init(); 5 LOAD output) v13250 Phytec   PC3250 board	^				
SetupForStart(); Build date: May 7 2009 09:57:19					
//g, c_entry					
v13250>					

Step4: 在Tera Term Pro 中键入任何键停止 S1L 自动引导。



Setp5: 在 Tera Term Pro 中键入 "load term raw 0x80000000" 回车运行。



Step6: 以 binary 格式发送 S1L.bin 到串口。

	Tera Tera	- COMI VI			
1	Tera Term:	Send file		? 🛛	
5 P	查找范围( <u>I</u> ):	🛅 BOOTLoader	• • 6	È 💣 📰 •	^
A	keil_s11.1	in			
P	🛅 kickstart.	bin			
2					
	文件名(M):	keil_s11. bin		打开(0)	
	文件类型 (I):	all	•	取消	
				帮助(H)	
	- Option				
	₩ <u>B</u>	inary			
					~

Step7: 按ALT+B 完成文件发送。

Iera Term - CONI VI	
<u>F</u> ile <u>E</u> dit <u>S</u> etup C <u>o</u> ntrol <u>W</u> indow <u>H</u> elp	
5 Phytec LPC3250 board Build date: Dec 4 2008 11:44:18 Autoboot in progress, press any key to stop	
phy3250>load term raw 0x80000000 Starting terminal download, send break to stop File loaded successfully	
phy3250>	
	~

Step8:键入 "update" 完成 S1L 的升级。



Step9: (操作同 step5~step7)在 Tera Term Pro 中键入"load term raw 0x80000000"回车,以 binary 格式发送 Kickstart.bin 到串口,按ALT+B 完成文件发送。

Step10: 键入 "update kick" 完成 Kickstart.bin 的升级。

#### 通过 UART5 (LPC3250 Loader Utility)

Step1: 使用交叉线将 PC 串口与开发板 UART5 连接,双击运行.\LPC3250\_Loader.exe(运行 LPC3250\_Loader.exe 前将 PC 语言设置为英语美国),配置 LPC3250 loader 如下。

🛃 LPC3180 Loader				
<u>F</u> ile <u>A</u> bout				
Program Flash	250 load	ler. V0.7 (re	y 34)	
		IRAM Address	Size	Program
CAN'T FIND: NOTUSED	Browse	0x80000004		Flash
Flash image	Deres 1	Flash Address	Size	- Full Erase
JCAN'T FIND: NOTUSED	DIOMSE	J0x0000		(be patient!)
- Executables				
Primary Boot [IRAM]		IRAM Address	Size	Load bin's /
restore.bin	Browse	0x0000	0x17BA0	Start primary
Secondary Executable (SDRAM)		SDRAM Address	Size	
CAN'T FIND: NOTUSED	Browse	0x80000004	1	
- Uboot/BootES/Kernel Images				
□ □ UBoot image		SDRAM Address	Size	Download
CAN'T FIND: NOTUSED	Browse	0x80000004		images
E BootFS image		SDRAM Address	Size	
CAN'T FIND: NOTUSED	Browse	0x80000004		
☐ Kernel image		SDRAM Address	Size	Start
CAN'T FIND: NOTUSED	Browse	0x80000004	1	Secondary Executable
- Compart control Status / Terminal c	autout			
	Jacpac			
Closed				
The second secon				
Cancel &				
Enable				
mode				× .
Progress>				17:01

Step2: 点击 load bin/Start primary 按钮开始烧写。

🛃 LPC3180 Loader				
<u>F</u> ile <u>A</u> bout				
LPC	3250 load	ler. V0.7 (re	y 34)	
Program Flash			Siza	
CAN'T FIND: NOTUSED	Browse	0x80000004		Flash
		Flash Address	Size	
CAN'T FIND: NOTUSED	Browse	0x0000		Full Erase (be patient!)
			1	(bo patients)
Executables				-
Primary Boot (IRAM)		IRAM Address	Size	Load bin's /
restore.bin	Browse	0x0000	0x17BA0	Start primary
Secondary Executable (SDRAM)		SDRAM Address	Size	
JCAN'T FIND: NOTUSED	Browse	0x8000004	1	
Libert/DeetEC/Kernelineeee				
UBoot image		SDRAM Address	Size	Download
CAN'T FIND: NOTUSED	Browse	0x80000004		U/R/K
RootFS image		SDRAM Address	Size	
CAN'T FIND: NOTUSED	Browse	0x80000004		
<u> </u>		SDRAM Address	Size	Start
CAN'T FIND: NOTUSED	Browse	0x80000004		Secondary
	ales at		- 10- E	Executable
Comport control	l output			
COM1: 💌				~
Closed				
Concella				
Close port				
Enable Terminal				1000
mode				<u>M</u>
				1201
Progress>				17:09

🛃 LPC3180 Loader File About LPC3250 loader. V0.7 (rev 34) Program Flash **IRAM Address** pg\_sibl Size Program Flash CAN'T FIND: NOTUSED Browse 0x80000004 1 Flash Address Flash image Size Full Erase Browse CAN'T FIND: NOTUSED 0x0000 (be patient!) Executables Primary Boot (IRAM) **IRAM Address** Size Load bin's / Browse 0x17BA0 0x0000 restore.bin Secondary Executable (SDRAM) SDRAM Address Size CAN'T FIND: NOTUSED Browse 0x80000004 Г Uboot/RootFS/Kernel Images SDRAM Address UBoot image Size 0x80000004 CAN'T FIND: NOTUSED Browse SDRAM Address RootFS image Size CAN'T FIND: NOTUSED. Browse 0x80000004 Kernel image SDRAM Address Size Browse Secondary CAN'T FIND: NOTUSED 0x80000004 Comport control-Status / Terminal output-COM1: Waiting for BootID ... 5 found! Ψ. Sending 'A' .. done! Open... Expect 2-nd BootId .. 5 .. found! Sending 'U','3'.. done! Expect 'R' .. R .. found! Cancel & Close port Sending startaddress .. done! Sending size .. done! Sending code ... Enable 正在下载bootloader Terminal mode Progress --> bytes sent 19117 / 97184 17:13

Step3: 迅速按下开发板的Reset 键(JP7: close, set UART5 boot)。



Step4: 升级 S1L& KickStart,步骤同前两种方法,使用 S1L 命令进行升级,此处不在过多叙述。

在非操作系统下使用

使用板载 S1L 运行应用程序

*Step1: 打开串口工具 Tera Term Pro (设置为 115200-8-n-1-n),将 PC 串口与开发板 UART5 通过 交叉线连接。* 

📕 Tera	a Term - COM2	VT	
<u>F</u> ile <u>E</u>	Tera Term: Se	erial port setup	$\mathbf{X}$
	<u>P</u> ort: <u>B</u> aud rate:	Сом2 ▼ ОК 115200 ▼	<u>~</u>
	<u>D</u> ata:	8 bit 💌 Cancel	
	P <u>a</u> rity:	none	
	<u>S</u> top:	1 bit 💌 Help	
	<u>F</u> low control:	none	
	Transmit delay 0 msec <u>/c</u> har 0 msec <u>/l</u> ine		
			*

Step2: 开发板上电启动,在Tera Term Pro 中键入任何键停止 S1L 自动引导。

Iera Term - COLI VI	
<u>File Edit Sctup Control Window H</u> elp	
<u>File Edit Setup Control Mindow H</u> elp 5 Phytec LPC0250 board Build date: Dec 4 2008 11:44:18 Autohoot in progress, press any key to stop phy8250>	~

Setp3: 在 Tera Term Pro 中键入 "load term srec 0x80000000" 回车运行。

🛄 Tera Term - COM1 VI	
<u>F</u> ile <u>E</u> dit <u>S</u> etup C <u>o</u> ntrol <u>M</u> indow <u>H</u> elp	
5 Phytec LPC3250 board Build date: Dec 4 2008 11:44:18 Autoboot in progress, press any key to stop	
phy3250>load term srec Starting terminal download, send break to stop	
	~

#### Step4: 发送编译好的应用程序 xxx.srec 到串口。

🛄 Iera Ierm - COMI VI		×
<u>File E</u> dit <u>S</u> etup C <u>o</u> ntrol <u>W</u> in	ndow <u>H</u> elp	
<u>N</u> ew connection Alt+N	1	^
Log Send file Transfer	key to stop	
Change directory		
<u>D</u> isconnect		
E <u>x</u> it Alt+Q		
	_	
		~

Tera Term:	Send file		? 🔀
查找范围(L):	🗁 Test	• 🕈	- 🎬 🏪
adc. srec hstimer. sr hsuart. sre i2c. srec kscan. srec lcdbars. sr	ec in lodtsc. srec ec in rtc. srec c in uart. srec ec		
文件名(10):	lcdtsc. srec		打开(0)
文件类型( <u>T</u> ):	all	•	
Option 🔽 Bi	nary		帮助(出)

Step5: 通过 info 命令可以查看内存的相关信息。

🛄 Tera Term - CONI VI	
<u>F</u> ile <u>E</u> dit <u>S</u> etup C <u>o</u> ntrol <u>W</u> indow <u>H</u> elp	
phy8250>info	^
Prompt bootup timeout (secs) = 3	
Number of FLASH blocks : 2048	
FLASH pages per block : 32	
FLASH bytes per page : 512	
Total FLASH size (Mbytes): 32	
Stage 1 loader number of blocks used: 25	
Address · 0x800000	
Size of image (bytes) : 23480	
Execution entry address : 0x8000000	
FLASH image first block used : 25	
FLASH image blocks used : 16	
FLASH image size in bytes : 262144	
FLASH image load address : 0x83fc0000	
FLASH image execution address : 0x83fc0000	
Autoboot source : FLASH	
Autoboot image type : RAW	
ARM system clock (Hp) = 202000000	
HCLK (Hz) = 104000000	
Peripheral clock (Hz) = 13000000	
Ethernet MAC address: 00:01:90:00:c0:81	iei i
phy8250>	~

Step6: 输入命令 exec运行内存中的应用程序代码。

#### 通过JTAG 在 RAM 中运行程序

Step1: 打开Keil MDK 工程,点击Option for target 对工程进行配置。



Step2:将 Device 项设置为 LPC3250,在 Debug 项下选择您所使用的调试工具(ex: Ulink2),将 Target 项下加载地址配置为如下图所示。

Options for Target 'LP	C3250 Int RAM'		
Device Target Output Listing	User C/C++ Asm	Linker Debug Utilities	
NXP (founded by Philips) LPC3250		Call Courseling	
	Xtal (MHz): 13.0	ABM-Mode	<b>-</b>
Operating system: None		Use Cross-Module Opti	mization
operating system. [140He		Use MicroLIB	🖵 Big Endian
		Floating Point Hardware:	_
		In-line (strict ANSI)	<b>•</b>
Read/Only Memory Areas		Read/Write Memory Areas	
default off-chip Start	Size Startup	default off-chip Start	Size Nolnit
П ROM1:	C	RAM1:	
ROM2:	C	RAM2:	
ROM3:	C	RAM3:	Г
on-chip		on-chip	
IROM1: 0x0	0x4000 C	✓ IRAM1: 0x8020000	0x20000 Г
✓ IROM2: 0x8000000	0x20000 📀	IRAM2:	
			ŦRP-
		(消 Defaults	

Step3: 点击Build target 对工程进行编译。

🕎 EasyWEB - 硫ision3 - [F:\光盘3	资料\YL3250用户光盘\BIOS和测试例程	演 🔳 🗖 🔀		
Eile Edit View Project Debug Flash	Peripherals Tools SVCS Mindow Melp	_ B X		
12 🖆 🖬 🕼 👗 🛍 🛍 🗠 🗠 🞼	∉ ∧ % % % <b>%</b>	• <b>#</b> #		
← → (2) ♣ @ ▶ ⊕ №	5 <b>@</b>			
😻 🔛 🌉 🥏 🝝 🛛 🗱 🔊 LPC3250 Int	RAM 🔄 🏝 🖷			
Project Workspace - ×	025 #include "LPC325x.h"	// Keil: B		
E A LPC3250 Int BAM	N26 #include "webpage.h"			
E HIML Source Build target	• 027			
E webpage, ht	128 -//void main(void)			
- A Startup Code	029 int main(void)			
LPC32x0. s	030 - K			
tepip.h	031 // InitOsc();	// Keil: N		
🖃 🚔 Source Code	032 //InitPorts();	// Keil: N 🚽		
🚊 🔝 easyweb. c 🔍 🔍		•		
		.   🖹 E   🖹 e		
× commiling easyweb.c	Finish			
compiling EMAC.c				
compiling topip.c	A 1997	- 6.5		
<pre>3 linking</pre>				
Ž Program Size: Code=10752 RO-da	ta=1652 RW-data=80 ZI-data=205	6		
💈 ".\Int_RAM\EasyWeb.axf" - O Er	ror(s), O Warning(s).			
A Connect ) Side Stor (				
Build & Command & Find in Fi	iles /			
		ULINK ARM Debugg //		

Step4: 点击 Debug 按钮进入调试状态,使用 Debug 工作栏中的运行选项进行应用程序全速运行 或单步运行调试。

🕎 EasyWEB - 🗮 ision3 - [Disassembly]		
🕵 Kile Edit View Project Debug Flash Peripherals Tools SVCS Window Help	_ & ×	
🎦 🖨 🖬 👗 🖻 🛍 🔍 오오 🕸 🦆 🦧 🏷 🎘	• #4 (**	
結 <b>   ③ 砂 砂 砂    ◇</b> 註 0 : 【● 刷 <sup>(1)</sup> ● 日 目 ■ ■ ■ № □	7	
Project Workspace	~	
Register Velue A 31: //InitOsc();	// Keil: F	
Gurrent 32: //InitPorts();	// Keil: No pc	
R0 0x080005c4 33:	and the second second second	
R: 0x08020858 CX080005C4 E92D4010 STMDB	R13!,{R4,R14	
34: TCPLowLevelInit();		
🗐 ·· 📃 ·· 🖳 🗤 ·· 🐨 ·· 📔 35:		
36: /*	-	
Symbols • × 37: *(unsigned char *)Re	emoteIP = 24; ⊻	
Mask: * Case Sensitive	2	
Name Add Type 📫 🖹 L 🖹 t 🖹 e 🖹 t	₿ E 🖹 e 🔗 D	
× Download();	V	
* PC Setup();		
<pre>3 GoMain();</pre>		
2 >		
S ASSIGN BreakDisable BreakEnable		
	cals $\langle Watch #1 \rangle Watch$	
Ready Real-Time Agent: Target Stopped	VLINK ARN Debugg	

Step5: 查看运行结果。

\*Easyweb 程序为以太网演示程序,将PC 与开发板通过交叉网线连接,设置PC IP 与开发板 IP 为 同一网段,在 IE 浏览器中键入开发板 IP 即可显示如下页面。



WinCE 下使用

WinCE 的启动过程为: KickStart->S1L->Eboot->WinCE。

*详见* NXP 应用文档 lpc32xx.bsp.wince.pdf。

Eboot.nb0 和 NK.bin 的生成

安装 VS2005 + PB6.0 environment

需要安装的软件如下:

- 1. Visual Studio 2005
- 2. Visual Studio 2005 SP1
- 3. Visual Studio 2005 SP1 Update for Vista (if applicable)
- 4. Windows Embedded CE 6.0 Platform Builder
- 5. Windows Embedded CE 6.0 SP1 (required if PB 6.0 Tools have been installed)
- 6. Windows Embedded CE 6.0 R2
- 7. Windows Embedded CE 6.0 Cumulative Product Update Rollup 12/31/2007
- 8. Windows Embedded CE 6.0 Monthly Update (from Jan to Sep, 2008)

安装 NXP LPC3250 BSP

将LPC32XX.rar 解压到.\WINCE600\PLATFORM\目录下。 运行 ins\_lwce.bat。

建立Wince 工程编译生成Eboot.nb0 和NK.bin。

Step1: 运行VS2005, Project-New 建立Platform Builder for CE6.0 Project, 具体操作如下:

选择 Platform Builder for CE6.0 Project 设置文件名及路径点击 "OK"。

New Project				? ×
Project types:		Templates:	00	5-5- 5-5- 5-5-
		Visual Studio installed templates		
		OS Design		
Platform Build	t Types der for CE 6.0			
		Search Online Templates		
A project for crea	ating a Windows Emb	edded CE 6.0 operating system		
<u>N</u> ame:	phy32_wince			
Location:	C:\WINCE600\OS	iDesigns	rowse.	
Solution Name:	phy32_wince	Create directory for solution		
		ОК	Cance	

 $进\lambda$  Design Wizard,点击"Next"。

Windows Embedded CE 6.0 OS Design Wizard	? ×
Welcome to the Windows Embedded CE 6.0 OS Design Wizard	
This wizard guides you through the process of creating an OS design for a CE 6.0 based platform. An OS design defines the characteristics of a CE 6.0 OS. You can create an OS design by choosing a design template and one or more board support packages (BSPs). A BSP includes an OEM adaptation layer (OAL) and device drivers. This wizard helps you: Choose a BSP. Choose a design template. Add items to your OS design or remove items from it. To continue, click Next.	
< <u>Previous</u> <u>Next</u> > Einish Canc	el

选择"NXP LPC32xx BSP"点击"Next"。

Windows Embedded CE 6.0 OS Design Wiza	ard 🤶 🗶
Board Support Packages	
Available BSPs:  Aruba Board: ARMV4I  Device Emulator: ARMV4I H4Sample OMAP2420: ARMV4I NXP LPC32XX BSP MainstoneIII PXA27X: ARMV4I Voice over IP PXA270: ARMV4I Voice over IP PXA270: ARMV4I	A BSP contains a set of device drivers that are added to your OS design. Select one or more BSPs for your OS design. Note: Only BSPs supported by installed CPUs are displayed in the list.
< <u>P</u> rev	vious Next > Einish Cancel

选择"PDA device"点击"Next"。

选择 "obile Handheld" 点击 "Next"。



*去除* "ActiveSync ",选择" the Windows Media Audio/MP3 "和"WordPad" , 点击"Next"。

Windows Embedded CE 6.0 OS Design Wizard	<u>? ×</u>
Applications Media	
<ul> <li>NET Compact Framework 2.0</li> <li>File Systems and Data Store</li> <li>Windows Embedded CE Error Reporting</li> <li>ActiveSync</li> <li>Quarter VGA Resources - Portrait Mode</li> <li>Windows Media Audio/MP3</li> <li>Windows Messenger</li> <li>WordPad</li> </ul>	Windows Embedded CE-based word
< <u>P</u> revious	ext >EinishCancel

去除"network"," Bluetooth",和"IrDA ",点击"Next"。

Windows Embedded CE 6.0 OS Design Wizard		? ×
Networking <u>Communications</u>		
TCP/IPv6 Support Wide Area Network (WAN) Local Area Network (LAN) Wired Local Area Network Wireless Local Area Network (802.11) Personal Area Network (PAN) Bluetooth Security Security	An infrared protocol that works with the Win32 application programming interface (API). Used to transfer data between IrDA-compliant devices.	
	Next > Finish Cance	. 1
_ erevious		

完成配置向导。

Windows Embedded CE 6.0 OS Design Wizard	? ×
05 Design Project Wizard Complete	
You have completed the wizard. Press Finish to create your OS Design project.	
< Previous Next > Finish Car	ncel

Step2: 配置 BSP 中的 LPC3250 driver。

点击catalog items view,选择LPC3250 "LCD display ", "wave device(audio) ", "FLASH media ", "I2C1", "backlight", "SD card controller", "touch screen", "USB drivers", 具体配置如下图所示。



选择"SD memory"。



选择"USB host", "OHCI support"和"USB support"。



*Configure support for the hive registry by enabling the Hivebased registry button in the catalog. Also enable the RAM and ROM file system button.* 



Step3: 运行 "Sysgen",编译并生成内核文件。



🏶 y13250 - Licrosoft Visual Studio			🔲 🖬 🔀
<u>File Edit View Project Build Debug Target Tools Window Community</u>	Help		
🛐 - 📰 - 😂 🛃 🥔 👗 📬 🔃 🔊 - 🕅 - 💭 - 🔜 🕨 NXP LPC32XX 💌 Plat:	form Builder (_TGTCI 💌 🏄 VSBOTGTransce	iverIS	191301 🔹 🔩 🚰 1 🏷 💽 🗉 🗸 👳
[圓池風水] 幸幸 [言음] □ 뫼母 和母 @ ┣ 및 ,			
Device: CE Device 🔹 🖓 😓 💷 😭 😴			
phy3250_otg_core. cpp wavemain. cpp phy3250_otg_core. cpp lpc32xx_otg_i2	c. cpp SDHCMain. cpp intr. c	₹×	Solution Explorer - y13250 🛛 🚽 🗙
(Unknown Scope)		~	
<pre>m_pP1301Tranceiver = new PHY3250_XCVR(m_ActiveKeyPath, this);</pre>		-	Solution 'y13250' (1 project)
if (!(m_pP1301Tranceiver && m_pP1301Tranceiver->Init()))		1	Build y13250
DEBUGMSG(1, (L"PHY3250_0TG::Init() 1301 transceiver init error\r\n"));		]	R <u>e</u> build y13250
<pre>KEIALLMSG(I, (L'PHI32SO_016::init() 1301 transceiver init error\r\n')); goto cleanup;</pre>		(	Clea <u>n</u> y13250
	Sysgen		Advanced Build Commands
// Enable PSW for VBUS control	<u>C</u> lean Sysgen		Build All Subprojects
RETAILMSG(1, (TEXT("Enable FSW for VBUS control\r\n"))); BYTE ctrl	Build and Sysgen	1	Rebuild All Subprojects
if (ReadXCVR(0x12, &ctrl) == F&LSE)	<u>R</u> ebuild and Clean Sysgen		Copy <u>F</u> iles to Release Directory
DEBUGMSG (1, (L"PHY3250_OTG::Init() 1301 transceiver VBUS control	Build Current BSP and Subprojects	1	Ma <u>k</u> e Run-Time Image
<pre>KEIALLMSG(1, (L FHI3250_016::Init() 1301 transceiver VB0S control }</pre>	Rebuild Current BSP and Subprojects	<b>CN</b> (	Dpen Release Directory in Build Window
ctrl  = 0x40; WriteXCVR(0x12, ctrl);			Global Build Settings
			Targeted Build Settings
a Sanaharana Ilalash ().		1	Project Dependencies
fRet = TRUE;		1	Project Build Order
cleanup:			Set as StartUp Project
return fRet;		×	Remove
			- Properties
Output		<u>. п х</u>	
Show output from: Windows CE Debug 💽 🖓 🎝 🛼 🛒 🖃			MAINSTONEIII     MAINSTONEIII     PhyCore_LPC3250_BI
			PUBLIC
21		3	Solution Exp Catalog Item
Beady		-	

Step4: 等待编译生成内核文件,约半个小时左右,具体时间和电脑配置有关,编译成功后,根据输出信息找到NK.bin和Eboot.nb0两个文件。

🏶 y13250 - Ticrosoft Visual Studio			
File Edit Yiew Project Build Debug Target Iools Window Co The second se	nmunity { • Plat	Help form Builder (IGTCH - 🦄	
Device: CE Device 🔹 💀 😓 😰 😭 🚽	<b>•</b> X	Solution Explorer - y13250	<b>↓</b> ↓ ×
(Unknown Scope)	~		
<pre>H//***********************************</pre>		Solution 'y13250' (1 projec:) - • • y13250 - • • C:/WINCE600 - • • PLATFORM - • • ARUBABOARD - • • COMMON	
Output	<b>-</b> ₽ ×	H S H4SAMPLE	
Show output from: Build 🔹 🦻 🦨 🔩 🐺 🖃			
C:\WINCE600\05Designs\y13250\y13250\RelDir\LPC32XX_ARMV4I_Release 的目录 2008-12-30 09:32 17,245,423 NK.bin 1 个文件 17,245,423 字节 0 个目录 4,753,752,064 可用字节	^	<ul> <li>B = Barameter Files</li> <li>B = S src</li> <li>B = S bootloader</li> <li>B = S common</li> <li>C drivers</li> </ul>	
BLDDEMO: y1325) build complete.		🗄 🔛 backlight	
y13250 - O error(s), 368 warning(s) ====================================		Gestalog Item	s View
Build succeeded	Ln 2027	Col 1 Ch 1	INS

#### 配置S1L 引导Eboot

S1L 支持从 SD 卡和 NandFlash 加载 Eboot.bin

#### S1L 从 SD 卡加载 Eboot

将Eboot.nb0 拷贝到SD。

 Step1: 打开串口工具 Tera Term Pro(设置为115200-8-n-1-n),将 PC 串口与开发板 UART5 通过

 交叉线连接。

🖪 Ter	a Term - COM	2 VT	_	
<u>F</u> ile <u>E</u>	Tera Term: S	Serial port	setup 🛛 🔀	
	<u>P</u> ort: <u>B</u> aud rate:	СОМ2 <b>-</b> 115200 <b>-</b>	ОК	^
	<u>D</u> ata:	8 bit 💌	Cancel	
	P <u>a</u> rity:	none 💌		
	<u>S</u> top:	1 bit 💌	<u>H</u> elp	
	Elow control:	none 💌		
	Transmit del 0 mse	ay ec/ <u>c</u> har 0 m	sec/ <u>l</u> ine	
				~

Step2: 开发板上电启动,在Tera Term Pro 中键入任何键停止 S1L 自动引导。

Tera Term Web 3.1 - COM1 VT	
<u>Eile E</u> dit <u>S</u> etup We <u>b</u> Control <u>W</u> indow <u>H</u> elp	
5 Phytec LPC3250 board Build date: Aug 7 2008 15:05:44 Autoboot in progress, press any key to stop	
PHY3250>	
	~

Step3: 输入 "aboot blk eboot.nb0 raw 0x83fc0000" ,设置自动从 SD 加载 Eboot 到 0x83fc0000, 并运行 Eboot。

Step4: 输入 "prompt PHY3250>1", 设置 S1L 运行 aboot 前等待时间 1S (也可设置其它值)。

🗏 Tera Term Web 3.1 - COM1 VT	
<u>Eile Edit S</u> etup We <u>b</u> C <u>o</u> ntrol <u>W</u> indow <u>H</u> elp	
5 Phytec LPC3250 board Build date: Aug 7 2008 15:05:44 Autoboot in progress, press any key to stop	
PHY3250>aboot blk eboot.nb0 raw 0x83fc0000 Autoboot configuration updated	
PHY3250>prompt PHY3250> 1	
phy3250>	
	~

输入"info"可查看 S1L 配置信息。

🛄 Tera Term - COM1 VI	
<u>F</u> ile <u>E</u> dit <u>S</u> etup C <u>o</u> ntrol <u>W</u> indow <u>H</u> elp	
FLASH bytes per page : 512 Total FLASH size (Mbytes): 32 Stage 1 loader number of blocks used: 25 File loaded in memory: None FLASH image first block used : 25 FLASH image first block used : 25 FLASH image blocks used : 16 FLASH image sectors used : 512 FLASH image size in bytes : 262144 FLASH image load address : 0x83fc0000 Autoboot source : Block : eboot.nb0 Autoboot image type : RAW Autoboot image load address : 0x83fc0000 Autoboot image execution address : 0x83fc0000 MMU : Enabled ARM system clock (Hz) = 208000000 HCLK (Hz) = 104000000 Peripheral clock (Hz) = 13000000 Ethernet MAC address: 00:01:90:00:c0:81	
Autoboot configuration updated	
phy3250>	~

Step5: 重新启动进入 Eboot 配置界面。

■Tera Term Web 3.1 - COM1 VT	
Eile Edit Setup Web Control <u>W</u> indow <u>H</u> elp	
5 Phytec LPC3250 board Build date: Aug 7 2008 15:05:44 Autoboot in progress, press any key to stop	
Microsoft Windows CE Bootloader Common Library Version 1.4 Built Aug 8 2008 13:50:51 System ready! Preparing for download Microsoft Windows CE EBOOT 1.0 for NXP LPC32XX Built Aug 8 2008 at 13:52:54 INFO: Boot configuration found Hit space to enter LPC32XX bootloader menu.	
NXP LPC32XX Main Menu	
<pre>[1] Change boot timeout [2] Set baud rate [3] Show Current Settings [4] Select Boot Device [5] Select Debug Device [6] Network Settings [7] Force clean boot [9] Save Settings [0] Exit and Continue</pre>	
Selection:	*

#### S1L 从 NandFlash 加载 Eboot

 Step1: 打开串口工具 Tera Term Pro(设置为115200-8-n-1-n),将 PC 串口与开发板 UART5 通过

 交叉线连接。

Step2: 开发板上电启动,在Tera Term Pro 中键入任何键停止 S1L 自动引导。

Step3: 输入"load blk eboot.nb0 raw 0x83fc0000",通过S1L 将eboot.nb0 从SD 加载到0x83fc0000。

🛄 Tera Term - COMI VI	
<u>F</u> ile <u>E</u> dit <u>S</u> etup C <u>o</u> ntrol <u>W</u> indow <u>H</u> elp	
Get OALINTR value for DMA channel Get OALINTR value f 5 Phytec LPC3250 board Build date: Dec 4 2008 11:44:18 Autoboot in progress, press any key to stop phy3250>ls NK.BIN EBOOT.NBO	
phy3250>load blk eboot.nb0 raw 0x83fc0000 File loaded successfully	
phy3250>	> .::

Step4: 输入 "nsave " , 保存 eboot.nb0 到 Flash(block 25~100 ) 。

🛄 Tera Ierm - COM1 VI	
<u>F</u> ile <u>E</u> dit <u>S</u> etup C <u>o</u> ntrol <u>M</u> indow <u>H</u> elp	
FLASH image size in bytes : 262144 FLASH image load address : 0x83fc0000 FLASH image execution address : 0x83fc0000 Autoboot source : FLASH Autoboot image type : RAW MMU : Enabled ARM system clock (Hz) = 208000000 HCLK (Hz) = 104000000 Peripheral clock (Hz) = 13000000 Ethernet MAC address: 00:01:90:00:c0:81 phy3250>load blk eboot.nb0 raw 0x83fc0000 File loaded successfully	~
phy3250>nsave	
phy3250>	× > .::

Step5: 输入"aboot Flash eboot.nb0 raw 0x83fc0000",设置自动从 Flash 加载Eboot 到0x83fc0000, 并运行 Eboot。

Step6: 输入 "prompt PHY3250> 1 " , 设置 S1L 运行 aboot 前等待时间 1S。

输入"info"可查看 S1L 配置信息。

Tera Term - COM1 VI	
<u>F</u> ile <u>E</u> dit <u>S</u> etup C <u>o</u> ntrol <u>W</u> indow <u>H</u> elp	
phy3250>info Prompt bootup timeout (secs) = 3	^
FLASH device : detected Number of FLASH blocks : 2048	
FLASH pages per block : 32	
Total FLASH size (Mbytes): 32	
Stage 1 loader number of blocks used: 25 File loaded in memory: None	
FLASH image first block used : 25	
FLASH Image blocks used : 16 FLASH image sectors used : 512	
FLASH image size in bytes : 262144 FLASH image load address : 0x83fc0000	
ELASH image execution address · 0x83fc0000	
Autoboot source : FLASH Autoboot image type : KAW	
MMU : Enabled	
HCLK (Hz) = 104000000	
Peripheral clock (Hz) = 13000000 Ethernet MAC address: 00:01:90:00:c0:81	
ppy32502	~

Step5: 重新启动进入 Eboot 配置界面。

启动 WinCE

WinCE 的启动过程为: KickStart->S1L->Eboot->WinCE。

#### **通过以太网卡启动WinCE**

 Step1: 打开串口工具 Tera Term Pro (设置为 115200-8-n-1-n),将 PC 串口与开发板 UART5 通过

 交叉线连接。

Step2: 开发板上电启动, 在 Tera Term Pro 看到显示"Hit space to enter LPC32xx bootloader menu" 中键入"space"键停止 Eboot 引导, 进入 Eboot 配置菜单。



Step3: 输入 "4" 进入 "[4] Select Boot Device" 菜单。

输入"1"选择"[1] LPC32XX RMII Ethernet"为以太网加载WinCE。

Tera Term Web 3.1 - COM1 VT	
Eile Edit Setup Web Control <u>W</u> indow <u>H</u> elp	
[0] Exit and Continue	^
Selection: 4	
Select Boot Device	
<pre>[1] LPC32xx RMII ethernet [2] SD/MMC Card [3] NAND FLASH [0] Exit and Continue Selection (actual LPC32xx RMII ethernet): 1 Boot device set to LPC32xx RMII ethernet</pre>	
NXP LPC32XX Main Menu	
<pre>[1] Change boot timeout [2] Set baud rate [3] Show Current Settings [4] Select Boot Device [5] Select Debug Device [6] Network Settings [7] Force clean boot [9] Save Settings [0] Exit and Continue</pre>	
Selection:	~

Step4: 输入 "5" 进入 "[5] Select Debug Device " 菜单。

输入"1"选择"[1] LPC32XX RMII Ethernet"。

🗏 Tera Term Web 3.1 - COM1 VT	
Eile Edit Setup Web Control <u>W</u> indow <u>H</u> elp	
[7] Force clean boot [9] Save Settings [0] Exit and Continue	^
Selection: 5	
Select Debug Device	
[1] LPC32xx RMII ethernet [0] Exit and Continue	
Selection (actual LPC32xx RMII ethernet): 1 Debug device set to LPC32xx RMII ethernet	
NXP LPC32XX Main Menu	
<pre>[1] Change boot timeout [2] Set baud rate [3] Show Current Settings [4] Select Boot Device [5] Select Debug Device [6] Network Settings [7] Force clean boot [9] Save Settings [0] Exit and Continue</pre>	
Selection:	~

Step5: 输入 "6" 进入 "[6] Network Settings " 菜单。

- 输入"2"使能"[2] Enable KITL"。
- 输入"3"设置"[3] KITL interrupt/poll mode"为"KITL interrupt"。
- 输入"4"设置"[4] Enable/disable DHCP"为"disable DHCP"。
- *输入"5"设置"[5] Set IP address",输入"192.168.1.2"。*
- 输入 "6 " 设置 "[6] Set IP mask " ,输入 "255.255.255.0 " 。
- 输入"7"设置"[7] Set default router",输入"192.168.1.1"。
- 输入"8"设置"[8] Enable/disable VMINI"为"disable VMINI"。
- 输入"1"查看"[1] Show Current Settings"当前设置如下图。
- *输入"0"返回Eboot 主菜单。*

🗏 Tera Te	erm - COM2	VT		×
<u>F</u> ile <u>E</u> dit (	<u>S</u> etup C <u>o</u> ntrol	∐indow	Help	
Network: KITL state: KITL mode: DHCP: IP address: IP mask: IP router: YMINI:	enabled interrupt disabled 192.168.1.2 255.255.255.0 192.168.1.1 disabled			~
Network Settin	 gs			
[1] Show Curre [2] Enable/dis [3] KITL inter [4] Enable/dis [5] Set IP add [6] Set IP mas [7] Set defaul [8] Enable/dis [0] Exit and C	nt Settings able KITL rupt/poll mode able DHCP ress k t router able VMINI ontinue			
Selection:				~

Step6: 使用交叉网线使PC 和开发板相连,设置PC 端IP。

Internet 协议 (TCP/IP) 属	<u>#</u> ? 🛛
常规	
如果网络支持此功能,则可以获取	自动指派的 IP 设置。否则,
这需要从四时承知自经以知效特担	
○ 自动获得 IP 地址 (0)	
● 使用下面的 IP 地址 (S): —	
IP 地址(L):	192 .168 . 1 . 1
子网掩码(U):	255 .255 .255 . 0
默认网关 (2):	192 .168 . 1 . 1
○ 自动获得 DWS 服务器地址 (B)	
● 使用下面的 DNS 服务器地址(	<u>E):</u>
首选 DNS 服务器 (P):	
备用 DNS 服务器(A):	
	「高雄の」
	确定 取消

Step7: 设置VS2005-PB6.0 的 "download and connection option"点击下图按钮。



选择 Transport 为 Ethernet, 并按 settiings 按钮, 使 use device name from bootloader 有效。

Device Configuration		
Add Device	Target Device:	
Delete Device	ICE Device	<u></u>
	Download:	
Service Configuration	Ethernet	▼ Setti <u>n</u> gs
Kernel Service Map	(lpc32-001009000)	
Core Service Settings	Turner out -	
Service Status	Ethernet	Sattings
	(lpc32-001009000)	Deccings
	Debugger:	
	None	<ul> <li>Settings</li> </ul>
		[ ¥a]= [
	Appiy <u>C</u> lose	<u>H</u> elp

🖢 Target Device Connectivity Op	ptions	
😼 Ethernet KITL Settings 💦 💈	X	
Device KITL Name:	vice:	<b>_</b>
lpc32-001009000		
IP Address: 0.0.0.0		Settings
Active Devices:	1009000 )	
		Settings
	<u> </u>	Setting <u>s</u>
Use device name from bootloader		
OK Cancel	<u>Apply</u> <u>Close</u>	Help
	ted.	//

重启开发板,选择目标设备此时串口信息如下图所示。

🗏 Tera Term - COM2 VT	×
<u>File Edit Setup Control Window H</u> elp Selection (actual LPC32xx RMII ethernet): 1 Debug device set to LPC32xx RMII ethernet	^
NXP LPC32XX Main Menu	
<ol> <li>Change boot timeout</li> <li>Set baud rate</li> <li>Show Current Settings</li> <li>Select Boot Device</li> <li>Select Debug Device</li> <li>Network Settings</li> <li>Force clean boot</li> <li>Save Settings</li> <li>Exit and Continue</li> </ol>	
Selection: 0 INFO: Boot device uses MAC 00:01:90:00:c0:81 INFO: **** Device Name lpc32-001009000 **** +EbootSendBootmeAndWaitForTftp Sent BOOTME to 255.255.255.255 Sent BOOTME to 255.255.255.255 Sent BOOTME to 255.255.255.255	<ul> <li>Image: Constraint of the second second</li></ul>

Target Device Connect	ivity Options			
Device Configuration				
Add Device	<u>T</u> arget Device:			
Aud Device	CE Device			•
Delate Device				
Oracian Oracianation	Ilowrdoad:		-	
Service Configuration	Ethernet		C Se	etti <u>ng</u> s
Kernel Service Map	(lpc32-001009000)	)	1.00	
Core Service Settings	Transport:			
Service Status	Ethernet		▼ Se	ttings
	( 1pc32-001009000 )	)		
	Debugger:			
	None		De	stting <u>s</u>
	Apply	Clos	e [	Help
Target device boot name: lpc32-001009000 IP address: 192.168.1.2 Boot loader: 1.0 <u>A</u> ctive target devices:	<b></b>			
lpc32-001009000	100			
10032-001009000				
	~			
TFTP block size in bytes	~			
IFTP block size in bytes:	~			
IFTP block size in bytes:	≩estore			
IFTP block size in bytes:	≷estore			
IFTP block size in bytes:	<u>≩</u> estore			
IFTP block size in bytes: 512	<u>≷</u> estore			

设置 Downloads 为 Ethernet 设备,并按 settings 按钮。

点击VS2005 相关设置 OK,点击应用按钮并关闭当前设置对话框。

Step8: 点击下图按钮进行目标设备连接。



连接成功, 下载 WinCE。

🚀 y13250 - Microsoft Visual Studio		
<u>File Edit Yiew Project Build Debug Target Tools</u>	<u>W</u> indow <u>C</u> ommunity <u>H</u> elp	
👔 • 🗉 • 💕 🗶 🧶 🐁 🛍 🖄 🔊 • 🔍 • 🔍 •	NXP LPC32XX - Platform Builde	er (IGTCH 🕶 🎽 😤
	Q _	
Device: CE Device • 🖓 🖓 🔤		
Start Page phy3250 otg core. cpp wavemain. cpp phy32	50 otg core.cpp 🗸 🗸	Solution Explorer - y13250 🗸 🗣 🗙
(Unknown Scope)	Runtime Image to	
<pre>m_pP1301Tranceiver = new P if (! (m_pP1301Tranceiver &amp;&amp;</pre>	Contractions (VI3250)	el
	>	🖻 🔂 fmd
Output	• # X	🛨 强 12c
Show output from: Windows CE Debug PB Debugger Debugger could not initialize connection. PB Debugger The Kernel Debugger is waiting to connect with ta PB Debugger The Kernel Debugger has been disconnected success C	rget. fully.	Solution Exp
Ready	Ln 362 Col 3	3 Ch 30 INS

Step8: 下载完成后自动运行 WinCE 程序。

#### 通过 SD 启动 WinCE

Step1: 将NK.bin 拷贝到SD。

*Step2: 打开串口工具 Tera Term Pro (设置为 115200-8-n-1-n),将 PC 串口与开发板 UART5 通过 交叉线连接。* 

Step3: 开发板上电启动, 在 Tera Term Pro 看到显示"Hit space to enter LPC32xx bootloader menu" 中键入"space"键停止 Eboot 引导, 进入 Eboot 配置菜单。

Step4: 输入"4"进入"[4] Select Boot Device" 菜单。

输入 "2" 选择 "[2] SD/MMC Card " 设置从 SD 卡启动。

输入"NK.bin"确认内核文件名。

🗏 Tera Term - COM2 VT	×
<u>F</u> ile <u>E</u> dit <u>S</u> etup C <u>o</u> ntrol <u>W</u> indow <u>H</u> elp	
<ul> <li>[2] Set baud rate</li> <li>[3] Show Current Settings</li> <li>[4] Select Boot Device</li> <li>[5] Select Debug Device</li> <li>[6] Network Settings</li> <li>[7] Force clean boot</li> <li>[9] Save Settings</li> <li>[0] Exit and Continue</li> </ul>	~
Selection: 4	
Select Boot Device	
[1] LPC32xx RMII ethernet [2] SD/MMC Card [3] NAND FLASH [0] Exit and Continue	
Selection (actual LPC32xx RMII ethernet): 2 Boot device set to SD/MMC Card Enter image name(actual 'nk.bin'): nk.bin	•

输入 "9" 选择 "[9] Save Settings " 保存设置。

Step5: 重启开发板将从 SD 卡启动 WinCE。

\*从 SD 卡启动时间比较忙, 取决于内核大小, 大约几分钟, 请耐心等待, 建议从 NandFlash 启动。

#### 

Step1:将NK.bin 拷贝到SD。

*Step2: 打开串口工具 Tera Term Pro (设置为 115200-8-n-1-n),将 PC 串口与开发板 UART5 通过 交叉线连接。* 

Step3: 开发板上电启动,在Tera Term Pro 看到显示 "Autoboot in progress, press any key to stop" 键入任意键进入 S1L 菜单。

🗏 Tera Term Web 3.1 - COM1 VT	
Eile Edit Setup Web Control <u>W</u> indow Help	
5 Phytec LPC3250 board Build date: Aug 7 2008 15:05:44 Autoboot in progress, press any key to stop	
PHY3250>	
	~

Step4: 输入 "Load blk nk.bin raw 0x80000000" 将 NK.bin 载入到 RAM 中。

🗏 Tera Term - COM2 VT	
<u>F</u> ile <u>E</u> dit <u>S</u> etup C <u>o</u> ntrol <u>W</u> indow <u>H</u> elp	
[7] Force clean boot [9] Save Settings [0] Exit and Continue	^
Selection: 5 Phytec LPC3250 board Build date: Jun 9 2010 21:55:57 Autoboot in progress, press any key to stop	
phy3250>load blk nk.bin raw 0x80000000 File loaded successfully	
phy3250>nburn 100 0	*

Step5: 输入 "nburn 100 0",将 NK.bin 保存到 NANDFlash block 100。

🔤 Tera Term - COMI VI	
<u>File Edit Setup Control Window Help</u> Ethernet MAC address: 00:01:90:00:c0:81 phy8250>load blk eboot.rb0 raw 0x83fc000C File loaded successfully phy8250>nsave	~
Phy3250>load blk nk.bin raw 0x83fc0000 File loaded successfully	
phy3250>nburn 100 0 Bytes written :17275031 Last block :1154 First sector :3200 Number of sectors :33741	运行nsrv 25 1155与此相关 不同大小的文件对就不同 的数值
phy3250>	

Step6: 输入 "nrsv 25 1155" 将 Flash Block 25~25+1155 设置为保留区域。

\* nrsv [first block][number of blocks]

Step7: 重启开发板,在Tera Term Pro 看到显示 "Hit space to enter LPC32xx bootloader menu"中 键入 "space"键停止 Eboot 引导,进入 Eboot 配置菜单。

Step8: 输入 "4" 进入 "[4] Select Boot Device " 菜单。

输入 "3" 选择 "[3] NAND FLASH " 设置从 NANDFlash 启动。

🗏 Tera Term - COM2 VT	×
<u>F</u> ile <u>E</u> dit <u>S</u> etup C <u>o</u> ntrol <u>W</u> indow <u>H</u> elp	
<ol> <li>Change boot timeout</li> <li>Set baud rate</li> <li>Show Current Settings</li> <li>Select Boot Device</li> <li>Select Debug Device</li> <li>Network Settings</li> <li>Force clean boot</li> <li>Save Settings</li> <li>Exit and Continue</li> <li>Selection: 4</li> </ol>	~
Select Boot Device	
[1] LPC32xx RMII ethernet [2] SD/MMC Card [3] NAND FLASH	
[0] Exit and Continue	
Selection (actual SD/MMC Card): 3 Boot device set to NAND FLASH	
	~

*输入"9"选择"[9] Save Settings"保存设置。* 

Step9: 重启开发板将从 NANDFlash 启动 WinCE。

🗏 Tera Term - COM2 VT	×
<u>F</u> ile <u>E</u> dit <u>S</u> etup C <u>o</u> ntrol <u>W</u> indow <u>H</u> elp	
Preparing for download Microsoft Windows CE EBOOT 1.0 for NXP LPC32XX Built Jun 17 2010 at 16:22:51 INFO: Boot configuration found Hit space to enter LPC32XX bootloader menu. 	^
BL_IMAGE_TYPE_BIN	
Download file information:	
[0]: Address=0x80000000 Length=0x021fbb64 Save=0x80000000	
<ul> <li>Record [ 0 ] dwRecAddr = 0x80000000, dwRecLen = 0x4</li> <li>Record [ 1 ] dwRecAddr = 0x80000040, dwRecLen = 0x8</li> <li>Record [ 2 ] dwRecAddr = 0x80000048, dwRecLen = 0x4</li> <li>Record [ 3 ] dwRecAddr = 0x80001000, dwRecLen = 0x10FFC</li> <li>Record [ 4 ] dwRecAddr = 0x80013000, dwRecLen = 0x18000</li> <li>Record [ 5 ] dwRecAddr = 0x8002C000, dwRecLen = 0x40F58</li> <li>Record [ 6 ] dwRecAddr = 0x8002C000, dwRecLen = 0x20140</li> <li>Record [ 7 ] dwRecAddr = 0x8011F000, dwRecLen = 0x30FFC</li> <li>Record [ 8 ] dwRecAddr = 0x8011F000, dwRecLen = 0x80170</li> <li>Record [ 9 ] dwRecAddr = 0x80218000, dwRecLen = 0x8080</li> <li>Record [ 10 ] dwRecAddr = 0x80224000, dwRecLen = 0xF86A0</li> </ul>	

#### LPC3250EVB 器件位置图

#### LPC3250 核心板





LPC3250DEVv4.26r2.pcb - Sun Jun 20 21:26:49 2010

参考文件

- 1. NXP 应用文档《phy32xx\_bl.pdf》。
- 2. NXP 应用文档《Ipc32xx.bsp.wince.pdf》。
- 3. NXP 芯片使用手册《user.manual.lpc3220.01.lpc3230.01.lpc3240.01.lpc3250.01.pdf》。
- 4. YL-LPC3250 开发板资料《YL-3250 使用手册.pdf》。

INT UUDI
----------

版本说明				
起草者	Guangbao xie	起草时间	2010-6-19	
批准者		批准时间		
版本号	V1.0			
更新记录	更新内容	更新时间	备注	
V1.0	原始版本,基本操作,未对文字描述进行检查 校正。	2010-6-19		