



EagleTech Technology Corp. Ltd.

USB FLASH DISC CONTROLLER

PL-8810

1. Description

The PL-8810 USB flash disc controller is a disc controller used to make a linear flash device array looks like a normal disc, erases the hidden flash related problems.

The PL-8810 USB flash disc controller with USB interface. It conforms to USB Specification, Version 1.1. The USB interface is for full speed operation (12Mb/s). The USB transceiver is embedded in this controller. With stable slew-rate control, the controller reduces EMI.

The PL-8810 USB flash disk controller has a Phase Lock Loop (PLL) embedded. The PLL provides all clocks needed in this controller. It needs an externally provided clock operating in 12MHz.

The PL-8810 USB flash disk controller can control up to 4 pieces of NAND flash memory. The flash capacity can be 32M bits up to 1G bits. And these chips can be of any combination. It has been optimized to support Toshiba, Samsung, Fujitsu and Out Grade Flash memory designs. The controller has write-protected ability to prevent writing data to flash. It has 2 led direct drive pins. It has three operation modes: suspend, active and idle mode. For read/write operation, the controller can achieve 1,000kB/920kB throughput. Comprehensive application with Windows OS is available.

This controller can operate in Win XP, Win2000, Windows Me, and Xbox without any driver installation.

The PL-8810 USB flash disk controller is available in cost-saving 48-pin TSOP package.

2. Features

- RISC micro-controller
 - High-performance RISC architecture
 - Single cycle instruction execution
- USB Specification Compliance
 - Conforms to USB Specification, Version 1.1
- Low Power, single 3.3V Power supply
- Flash controller with full-speed USB interface
- Integrated USB transceiver
 - Dynamic feedback control

Stable slew rate, independent of external loading

- Power on reset
- 8Kx8 Flash as program memory
- 12 MHz external clock
- Integrated PLL
- Support up to 4 pieces of NAND Flash memory with write-protected ability
- Automatic bad block management
- Supported OS:

Win XP, Win2K, Windows ME, Linux 2.4 above, and MAC OS 9.0 & higher

Win 98 driver available

Mac 8.6 mass storage driver available from Apple

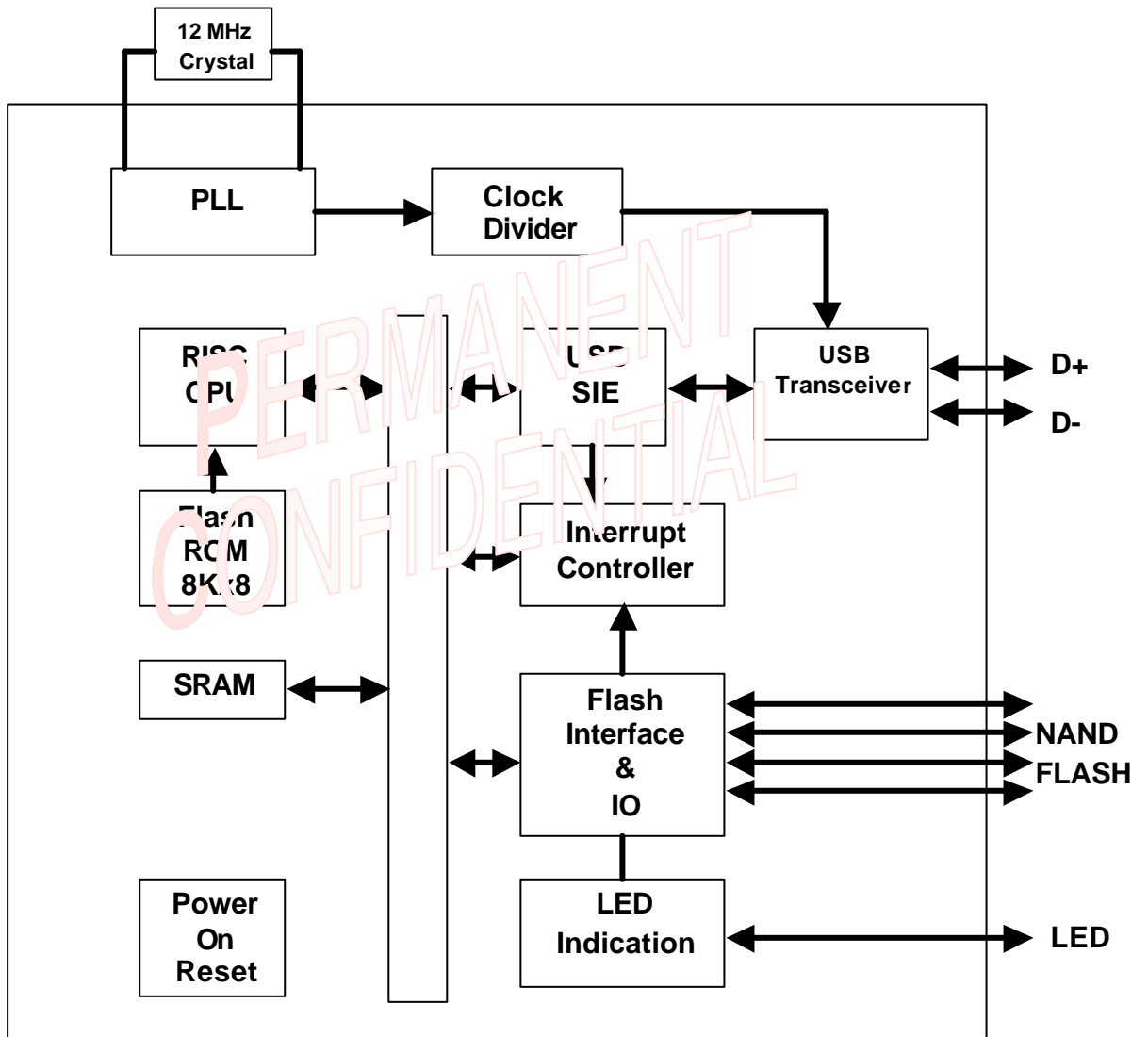
Multiple LUN Windows driver is available

X-BOX

- LED indication:
 - Programmable through Mass Production Toolset
- Performance: Read (1,000kBytes/s), Write (920kBytes/s) Max.
- Standard 48-pin TSOP package.



BLOCK DIAGRAM





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Pin Description

Pin Name	Attribute	Description	Pin #
Nreset	I	-ve reset	1
VDD	I	3.3v	2
OSCI	I	Crystal input	3
OSCO	O	Crystal Output	4
CLKO	O	48MHz	5
VSS	I	GND	6
VSS	I	GND	7
PADM	IO	USB D-	8
PADP	IO	USB D+	9
VDD	I	3.3V	10
P0_7(FD7)	IO	Flash data bus bit 7	11
P0_6(FD6)	IO	Flash data bus bit 6	12
P0_5(FD5)	IO	Flash data bus bit 5	13
P0_4(FD4)	IO	Flash data bus bit 4	14
P0_3(FD3)	IO	Flash data bus bit 3	15
P0_2(FD2)	IO	Flash data bus bit 2	16
P0_1(FD1)	IO	Flash data bus bit 1	17
P0_0(FD0)	IO	Flash data bus bit 0	18
P1_7(FWP)	O	Flash write protect	19
P1_6(FCLE)	O	Flash command latch enable	20
P1_5(FEW)	O	Flash write enable	21
P1_4(FALE)	O	Flash address latch enable	22
P1_3(FRE)	O	Flash read enable	23
VSS	I	GND	24
P1_2(FCE)	O	Flash chip select	25
P1_1	O	Extended output	26
P1_0	O	Extended output	27
TEST	I	Test enable	28
MODE0	I	MODE SELECT	29
MODE1	I	MODE SELECT	30
P3_0	IO	USER IO	31
P3_1	IO	USER IO	32
VDD	I	3.3V	33
VSS	I	GND	34
P3_2	IO	USER IO	35
P3_3	IO	USER IO	36
VSS	I	GND	37



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– Pin Description (Continue)

P3_5	IO	USER IO	36
VSS	I	GND	37
VDD	I	3.3v	38
P3_4	IO	Led	39
P3_5	IO	Led	40
P2_0	IO	USER IO	41
P2_1	IO	USER IO	42
P2_2	IO	USER IO	43
P2_3	IO	USER IO	44
P2_4	IO	USER IO	45
P2_5	IO	USER IO	46
P2_6	IO	USER IO	47
P2_7	IO	USER IO	48

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– D.C. Characters

DC Characteristics-1 (Ta=0 °C to +70 °C, Vcc = 3.3V ±10%)

Parameter	Symbol	MIN.	TYP	MAX.	UNIT
P0wer Supply	VCC	3.0	3.6	3.6	V
Input Voltage	VIH	0.7xVCC		5	V
	VIL	-0.3		0.2xVCC	V
Output Voltage	VOH	VCC-0.4			V
	VOL			0.4	V
Input Leakage Current	ILK	-1		1	UA
Working Current	IRW		TBD		mA
Operating Temperature	Ta	0		70	
Storage Temperature	Ts	-55		+150	
I/O Output Current	IOH		4		mA
	IOL		4		mA



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– A.C. Characters

Parameter	Symbol	MIN.	TYP.	MAX.	Unit
Input Rising Delay	Tird	TBD	TBD	TBD	ns
Input Falling Delay	Tifd	TBD	TBD	TBD	ns
Output Rising Delay	Tord	TBD	TBD	TBD	ns
Output Falling Delay	Tofd	TBD	TBD	TBD	ns

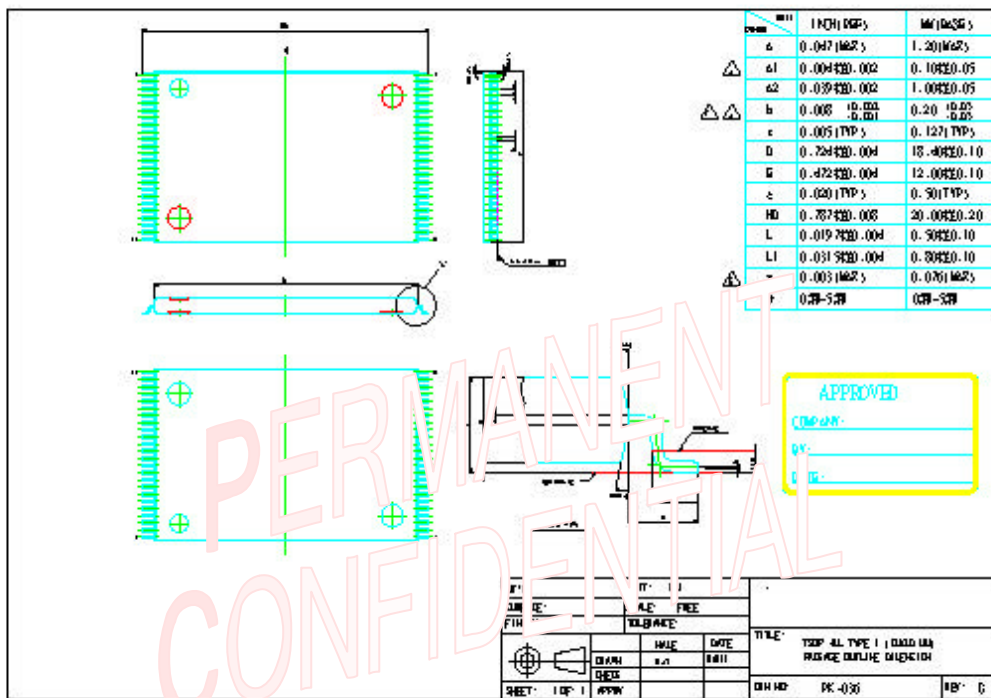
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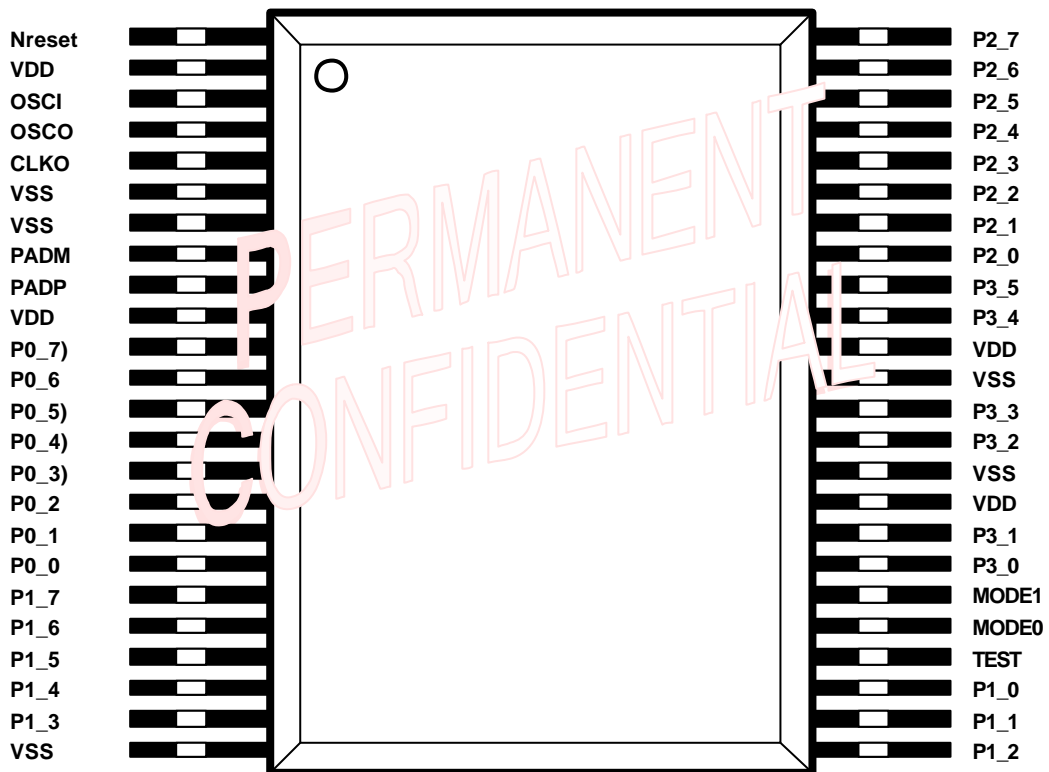


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● TSOP 48PINs (Pin Description)





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