SOC3210 Series

Main Features

High performance CPU Core

- 32bits RISC CPU Core with 266MIPS@266MHz
- MIPS32 Instruction set support
- 5 levels pipeline instruction architecture
- Integrated 16KB 4-ways I-Cache, 8KB 2-ways D-Cache
- 32-entry TLB support
- Integrated pipeline Multiply Unit

SDRAM controller

- 32bit @133MHz controller
- Maximum 256M bytes capacity
- PC100/133 compatible
- 1,2,4,8 bytes burst length support

NOR Flash controller

- 8bits or 16bits mode compliant
- Maximum 32M bytes capacity
- Byte, half word & word reading mode support
- Automatic sleep mode for power saving

NAND Flash controller

- 8bits or 16bits mode compliant
- Maximum 1Tera (1024G) bytes capacity
- Byte, half word, word & page reading mode support
- Automatic sleep mode for power saving

Host Port Interface master controller

- Infineon Vinetic series DSP chips' compatible
- Intel Demultiplexed mode & Motorola Mode

LCD controller

- 320x240, 640x480, 800x600, 1024x768, up to 1280x960 display mode support
- Configurable 16bit/8bit/4bit/2bit/1bit width colors
- 16 gray level monochromatic STN panel support
- 4096 colors STN panel support
- 65536 colors TFT panel support

Ethernet controller

- Integrated 802.3 MAC controller with MII Interface
- 10/100Mbps compatible bit-rate

AC97 interface

- 16bit/18bit/20bit sample resolution
- Up to 48KHz high transfer bit-rate support
- 2-channels stereo output
- 1 channel microphone input

Peripheral Blocks

- 4-wires full-duplex synchronization SPI
- 2-wires UART Port x2
- PS2 ports for keyboard & mouse connection
- Philips spec compatible I2C controller
- IEEE1149.1 compatible JTAG interface for in-circuit debug
- Multi-channels GPIO interface for software control directly
- CAN Bus x2
- External interrupt support

System Blocks

- Integrated two PLL to provide multiple clock frequency selection for CPU & system
- Use 5MHz external crystal
- Integrated 32 watch dog to avoid system deadlock
- Advanced interrupt controller
- Integrated DMA controller

Software

- Linux2.6 operating system
- Full tools' chains of standard SOCC design kit

Supply voltage

- Dual power system, 3.3V for I/O & 1.8V for core
- Low power consumption:
  $\leqslant$60mW@150MHz, $\leqslant$118mW@266MHz

Temperature range: -40℃~85℃, Industry STD.

ESD: 2KV HBM STD.

3 different chips are provided:

SOC3210W   SOC3210M   SOC3210I
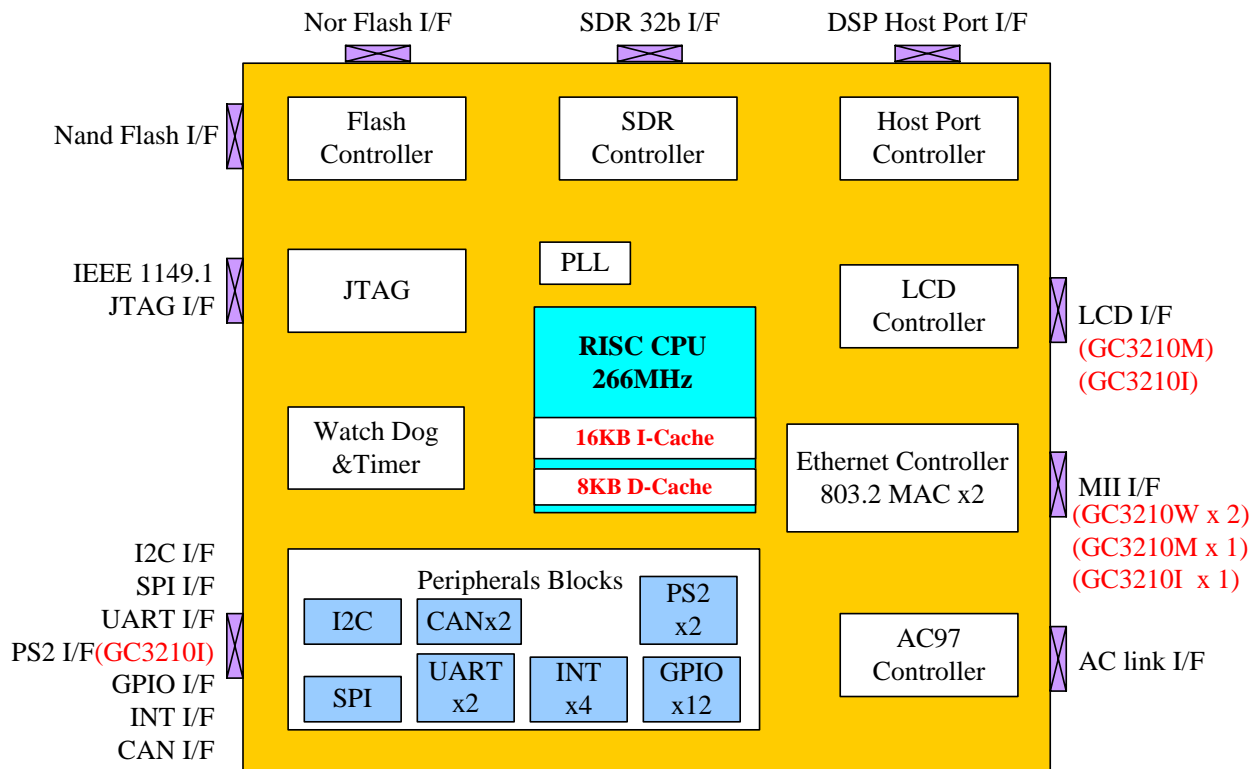
SOC3210 Series

The Function List of SOC3210W, SOC3210M, SOC3210I

Name	RISC CPU	EMI			LCD	AC97	MII	UART	SPI	I2C	PS2	JTAG	GPIO	CAN	INT	Others	Package
		SDR	Flash	HPI													
SOC3210 W	√ 266M	√	NOR NAND	√	–	√	2	1	√	√	–	√	12	2	4	WDT PLL	QFP208 LQFP208
SOC3210 M	√ 266M	√	NOR NAND	√	√	√	1	1	√	√	–	√	10	1	4	WDT PLL	QFP208 LQFP208
SOC3210 I	√ 266M	√	NOR NAND	√	√	√	1	2	√	√	2	√	12	2	4	WDT PLL	QFP208 LQFP208

Note: " √ " means the function or interface is supported. And "1" or "2" means the supported block's quantity.

"-" means the function or interface is not supported.

SOC3210 Series' Function Block Diagram

Refer to the SOC3210 series datasheet for more hardware information in detail. Please contact the sales department of Grand Chips to get the datasheet of SOC3210W, SOC3210M, SOC3210I.

SOC3210 Series

Summary of Benefits

➢ High performance and low cost for high quality audio player.

➢ Fully integrated Ethernet Controller, LCD displayer controller, Audio Codec controller, RISC CPU and others peripherals for low cost IP-based applications.

Chip Name	Especial Application
SOC3210W	Back-Ground Music Player, VoIP Gateway & Router and so on
SOC3210M	Wi-Fi Radio, WAA, Digital Photo Frame & VoIP phone and so on
SOC3210I	All of above, Industry Controller, Automobile electronic device and so on

➢ Provide total solutions technical supports for customers including hardware design, software drivers & applications design.

➢ World-wide free standard operating systems, tools' chains & middleware support.

Electronics Specification (At 25℃)

Parameter	Symbol	Value			Unit	Memo
		Min	Typ	Max		
Core voltage	VCCInst	1.62	1.8	1.98	V	
IO voltage	VCCIO	2.97	3.3	3.63	V	
PLL voltage	AVDD18 AVDD_5AP	1.62	1.8	1.98	V	should use independent filter capacitor
Input low level logic voltage	VIL	−0.3		1.2	V	
Input high level logic voltage	VIH	1.5		5.5	V	
Input leakage current		-10			uA	
Output low logic level voltage				0.4	V	
Output high logic level voltage		2.4			V	