F1C500s

Car HD multimedia processor

Overview

The F1C500s is a highly integrated, low-power mobile application processor that can be used in a wide range of multimedia audio and video equipment.

The F1C500s is based on the ARM9 architecture and integrates DDR. It supports HD video decoding, including H.264, H.263, MPEG1/2/4, etc. It also integrates audio codec and I2S/PCM interface to enhance the user experience.

The F1C500s has excellent system integration capabilities, simple development, supports for low-power applications and rich interfaces such as USB OTG, UART, SPI, TWI, TP, SD/MMC, CSI, etc., which can support operations such as Melis, Linux OS. It is a product with simple development and high cost performance.

Highlights

H.264 video decoding
Support H.264 1280x720@30fps decoding
Support MPEG1/2/4 1280x720@30fps decoding

MJPEG video encoding
Support MJPEG 1280x720@30fps encode
Support JPEG encode 8192x8192

High integration
Integrated 32MB DDR1, integrated audio codec
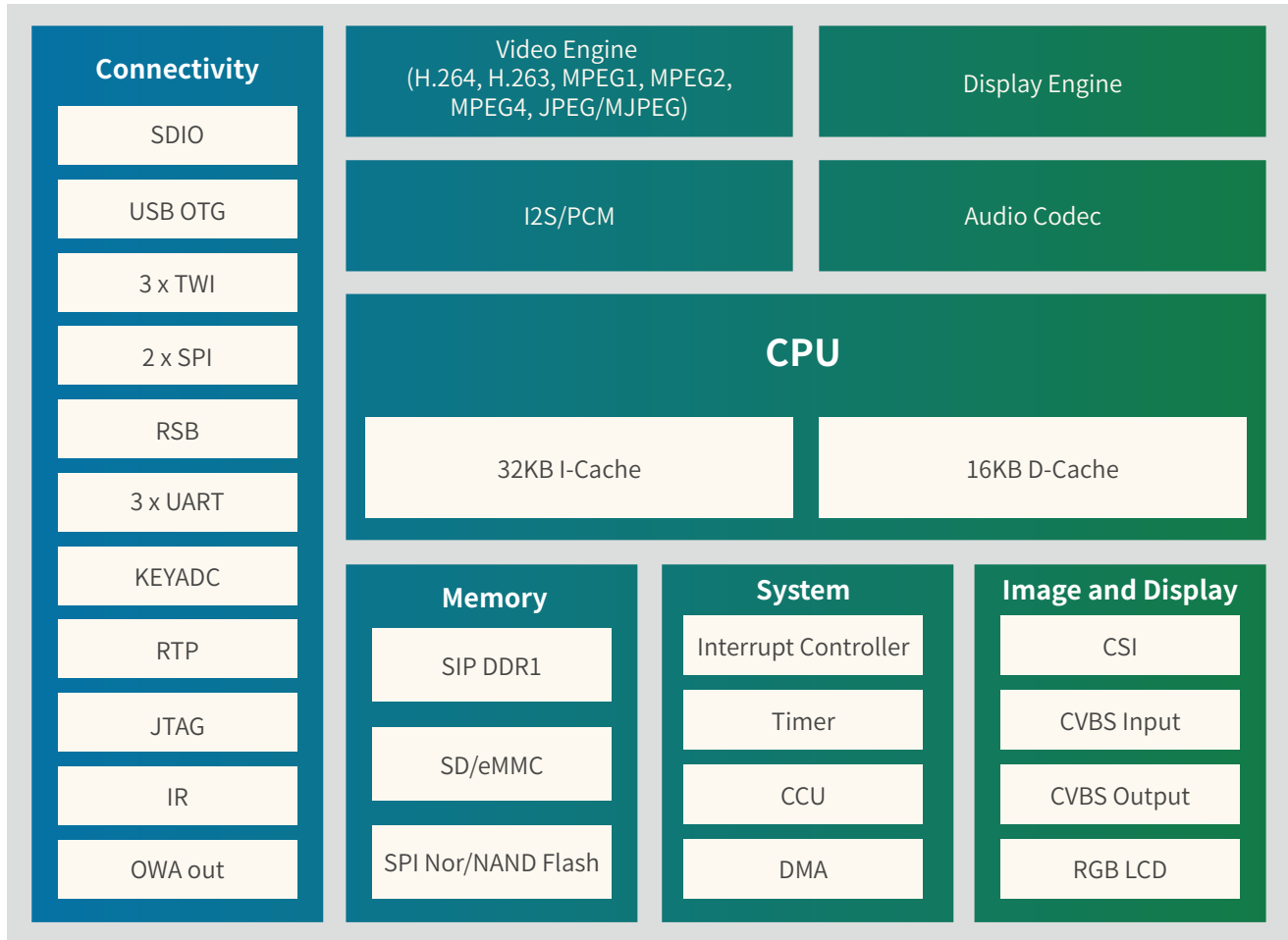Integrated rich interfaces, audio and video images, such as TV IN/OUT

Low cost, low power consumption, easy to develop
The chip is highly integrated, the BOM development cost is low, the external materials are streamlined, and the development is simple.

Features

CPU	• ARM9 CPU architecture • 16KByte D-Cache • 32KByte I-Cache
Memory	• SIP 32MB DDR1 • SD2.0, eMMC 4.41
Video	• H.264 1280x720@30fps decoding • MPEG1/2/4 1280x720@30fps decoding • MJPEG 1280x720@30fps encoding • JPEG encode size up to 8192x8192
Camera	• 8-bit CMOS-sensor interface • Supports CCIR656 protocol for NTSC and PA
Audio	• Integrated analog audio codec with two DAC channels and one ADC channel, maximum 192kHz DAC sample rate and 48kHz ADC sample rate • One I2S/PCM interface
Display	• LCD RGB interface up to 1280x720@60fps • TV CVBS output, support NTSC/PAL, with auto plug detecting
Connectivity	• USB OTG, SDIO, IR, 3 x TWI, 2 x SPI, 3 x UART
OS	• Melis, Linux OS
Package	• QFN88, 10mm x 10mm
Process	• 40nm

Block Diagram

Connectivity
SDIO
USB OTG
3 x TWI
2 x SPI
RSB
3 x UART
KEYADC
RTP
JTAG
IR
OWA out

Video Engine
(H.264, H.263, MPEG1, MPEG2, MPEG4, JPEG/MJPEG)

I2S/PCM

Display Engine

Audio Codec

CPU

32KB I-Cache	16KB D-Cache

Memory	System	Image and Display
SIP DDR1	Interrupt Controller	CSI
SD/eMMC	Timer	CVBS Input
SPI Nor/NAND Flash	CCU	CVBS Output
	DMA	RGB LCD