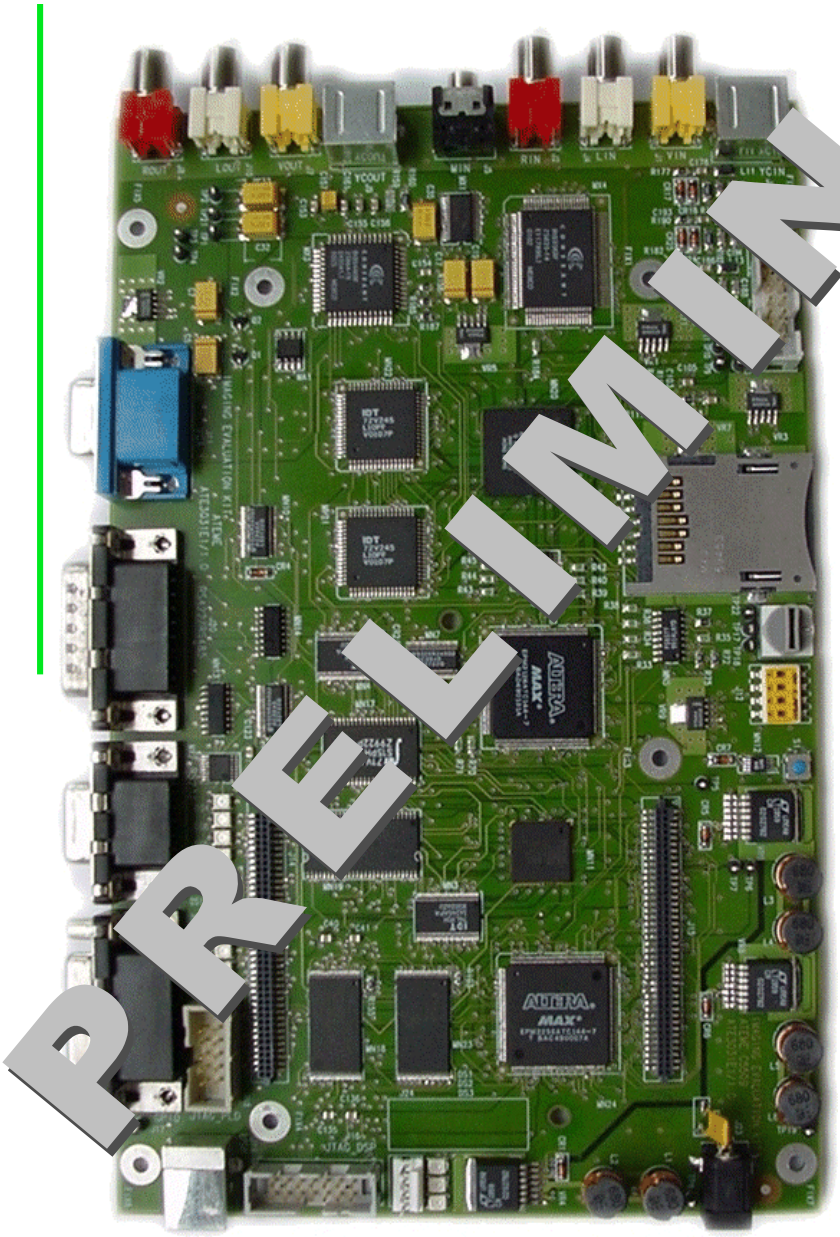
A.T.E.M.E

Introduction



PRELIMINARY

Imaging Evaluation Kit C5509

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1.Introduction

This document is an introduction to the new Imaging Evaluation Kit C5509.

This new IEK will complete the Imaging Evaluation Kit program, which is already composed of:

- Imaging evaluation Kit C6211
- Imaging evaluation Kit C6415
- JPEG and Motion JPEG encoders and decoders for C5000 and C6000
- H263 encoder and decoder for C6000
- MPEG2 decoder for C6000
- AAC encoder and decoder for C6000 (floating point)
- CELP encoder and decoder for C6000 (floating point)
- MPEG4 solutions for C6000 (audio, video and system layer)
- JPEG2000 solutions for C6000

This kit will be available very soon after the 'C5509 DSP introduction.

The board will be available:

- With the TMS320C5509 DSP for stand alone use only.

- To address different application fields for portable equipment:
    - General purpose DSP evaluation: evaluation module like version
    - Imaging equipment: includes audio and video features (interfaces and drivers)
    - Telecommunication systems: including the whole set of interface of the C5509

2. Overview

The Imaging Evaluation Kit C5509 is based on a TMS320C5509 DSP.

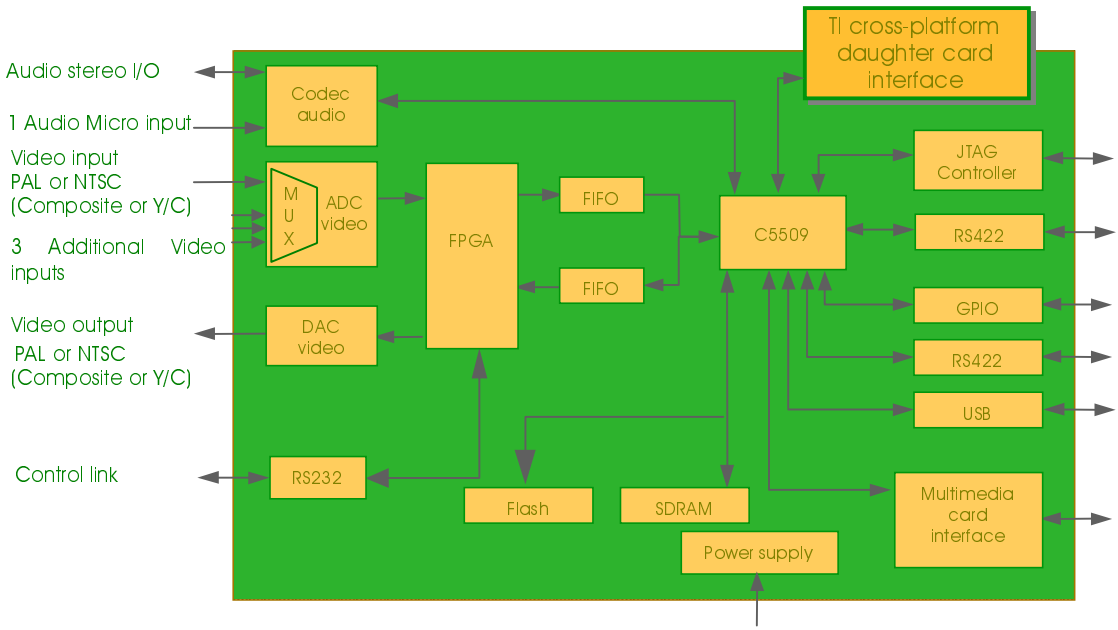
The DSP section is complete:
- 4 MB SDRAM
- 8 MB Flash (4 M x 16)
- Memory Card (Multimedia interface)
- FPGA processing capability (up to 100 Kgates)

The general-use interfaces are:
- USB interface
- Serial links interfaces for data: McBSP with RS422 or LVDS interfaces
- Serial links interfaces for control: RS232
- One Cross-Platform Daughter slot (cf TI standard SPRU 711: allows Networking add-on)
- 8 GPIO lines
- 4 analog inputs

The Imaging main features are:
- Video acquisition (NTSC or PAL)
- Video generation (NTSC or PAL)
- Audio acquisition (stereo, line level, CD quality + microphone input)
- Audio generation (stereo, line level, CD quality)
- I2S link (synthesized with McBSP)

The Evaluation board is a stand alone system (single power supply).

Block diagram:



3. Main features

Uses:
- Stand alone board.
- Single power supply: 8 - 12 Volts input.
- Flash memory (8 MB)

Video acquisition:
- 4 composite video inputs with 4->1 multiplexor.
- Y/C video input.
- PAL and NTSC standards.
- Inputs software selectable.

Audio acquisition:
- Audio Stereo Line input (CD quality), up to 96KHz sampling rate.
- Audio Mono Microphone input.
- Inputs software selectable.

Video generation:
- Composite video output (PAL, NTSC).
- Video output mode:
  - Composite + Y/C.
- Y/C video output.

Audio generation:
- Audio Stereo Line output (CD quality).

Memory Card:
- Multimedia card interface.

Communication links:
- USB slave.
- UART RS232.
- RS422 / LVDS link (McBSP0).
- 8 GPIO (3.3 V input).
- 4 analog inputs (0 to 3.3 V – sampling rate up to 21.5 kHz).

Emulation:
- JTAG HE14 connector.

Processing resources:
- DSP TMS320C5509.
- 4 MB SDRAM.
- 8 MB FLASH (8 banks of 512Kw of FLASH).
- Boot mode selectable (switch configuration)
- FPGA 100 Kgates ALTERA.

Expansion port:
- TI Cross-Platform Daughter card.
- Compatible with use of NDK (TI Network Development Kit) daughter card and IDK (TI Imaging Development Kit) daughter card.

Visual Interface:
- 10 user-programmable LEDs.