A.T.E.M.E

L'oasis des technologies

Signal

Imaging

Engineering

Acquisition

Shortform Catalogue

Products
&
Engineering Services

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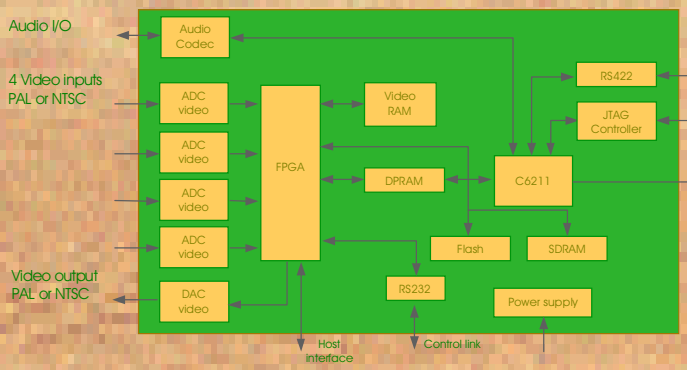
EVALUATION BOARDS

Ateme's evaluation tools are used for various applications in imaging and telecommunication fields from evaluation to development stage : Demo-ing, algorithm evaluation, prototyping, FPGA development, software optimization, ...

This range of products enables DSP selection between 'C5509 for portable equipment, 'C6211 for low-cost feature-rich equipment and 'C6415 for high end applications.
Its complete and feature-rich software development environment is useful to cut down time to market. Moreover, its hardware flexibility supports extension with all kinds of communication links via mezzanine boards.

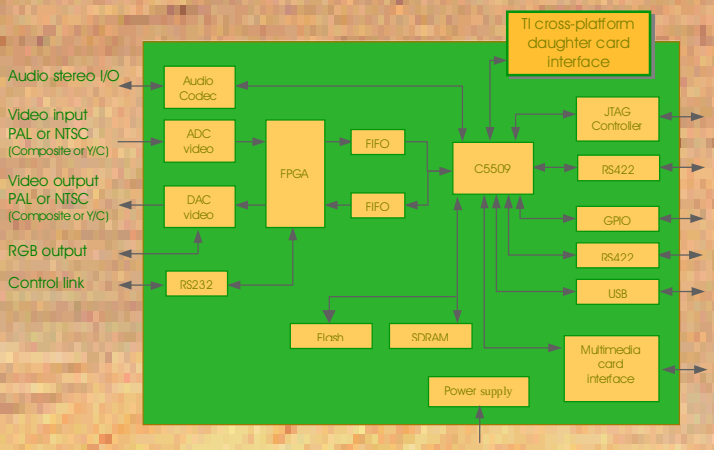
Ateme offers various solutions for technical support from hotline to application engineer assistance, sharing its specific engineering services in order to reduce development time.

√ Imaging Evaluation Kit - IEK C6211



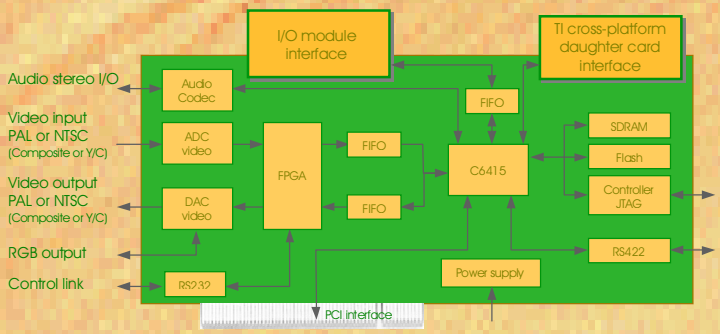
- 4 composite video inputs
- 1 composite video output
- 1 analog audio I/O
- 1 DSP TMS320C6x11:
  - fixed point 'C6211
  - floating point 'C6711
- 1 FPGA 50 Kgates
- Serial and parallel links
- General TTL I/O port
- Single power supply

√ Imaging Evaluation Kit - IEK C5509



- 1 composite or SVHS video I/O
- 1 RGB video output
- 1 stereo audio I/O
- Flash memory card interface
- USB port
- RS232 and RS422 serial link
- General TTL and analog I/Os
- 1 DSP TMS320C5509
- 8 MB Flash
- 8 MB SDRAM
- TI cross-platform daughter card
- Single power supply

√ Imaging Evaluation Kit - IEK C6415



- Stand alone or PCI use
- 1 composite or SVHS video I/O
- 1 RGB video output
- 1 stereo audio I/O
- 1 DSP TMS320C6415
- TI cross-platform daughter card
- High speed extension ports
- PCI master and slave interface

Imaging Evaluation Kit composition

✓ Hardware :
- ☞ Board with DSP and FPGA
- ☞ Power supply
- ☞ FPGA sources
- ☞ S/W and documentation on CD

✓ Software development environment :
- ☞ Communication drivers
- ☞ Ateme Imaging framework, eXpressDSP compliant, to decrease development time
- ☞ Tutorials and templates
- ☞ Applications samples
- ☞ Algorithm demos
- ☞ Code Composer Studio option

✓ Audio / Video kit option :
- ☞ Camera (PAL or NTSC)
- ☞ Microphone
- ☞ Speakers
- ☞ Cables and adapters

✓ Daughter card options :
- ☞ I/O module
- ☞ TI cross-platform card

✓ Technical support from Ateme :
- ☞ Hotline support (free of charge)
- ☞ Expert support : Application Engineer design assistance
- ☞ Design support : Specific H/W or S/W development

√ DSP Evaluation Kit - DEK C6415

This board is an evolution from the IEK C6415 to address telecommunication and general purpose applications, thanks to its complete set of interfaces : PCI, DSP bus, McBSPs, Utopia II, ...

Both PCI and stand-alone configurations increase flexibility of this complete hardware and software development environment.

ATEME products can be customized to your system requirements

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VIDEO COMPRESSION ALGORITHMS

eXpressDSP™ Compliant DSP TEXAS INSTRUMENTS

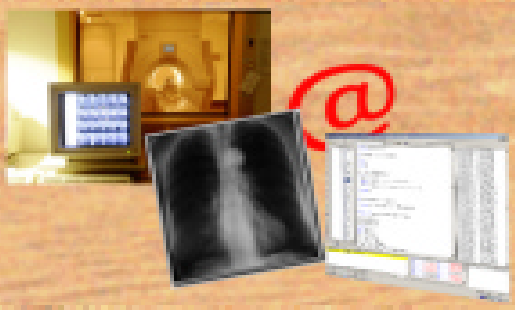
√ JPEG & Motion JPEG

Applications: Observation systems, video-security, medical imaging, vision, UAV, portable equipment, cameras,etc.

This baseline implementation of JPEG and Motion JPEG standards is fully optimized for both the 'C5000 and 'C6000 Texas Instruments DSP families. Every JPEG parameter and bit stream feature is user-defined, making this algorithm very flexible in terms of performance, cost and time-frame targets. Our solution supports extensions in terms of lossless, progressive or hierarchical encoding,... Moreover it requires no external memory and no calls to DMA features.

√ JPEG2000

Applications: Internet applications, digital (still) cameras, scanners, medical imaging (ultrasound scan, radiology), satellite imaging,etc.



This new standard for imaging compression is developed on the Texas Instruments 'C6000 DSP family. JPEG2000 is a wavelet based technology. Its main features are: Higher quality for a higher compression rate, progressive decoding and possibility of lossless or lossy encoding.

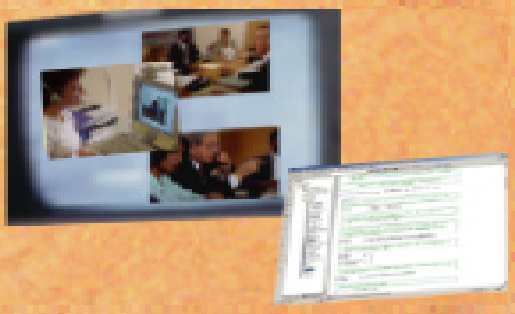
√ MPEG2

Applications: Television local network, set top boxes, video advertisement in (public) transport, digital television (cable, satellite or radio transmission),etc.

A complete software solution developed by Ateme for the 'C6000 DSP family. MPEG2 fully satisfies the need for high quality images. It is a flexible algorithm in terms of evolution with lasting quality. MPEG2 on DSP architecture is a well adapted solution for embedded real-time systems.
MPEG2 is easily customized in terms of I/O format, image outlet latency, memory optimization, audio decoder, etc.

√ H263

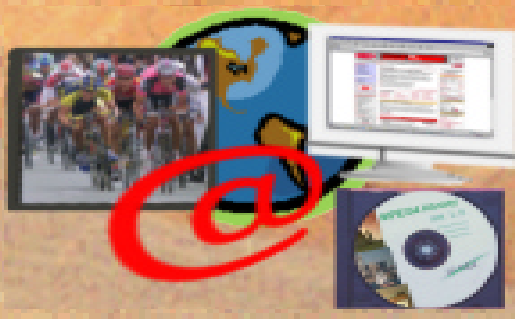
Applications: Video-conference, video-security, video-phone, Internet applications, etc.



This imaging compression algorithm is dedicated to low bit-rate video imaging applications. 100% software solution for 'C6000 DSP family, H263 allows low cost DSP architecture for embedded real-time systems. Its main advantages are: Flexible evolution, ease of maintenance and possibility to integrate additional functions (e.g. audio, modem).
H263 software supports extensions and options in terms of H263 standard appendices, transmission protocol, ...

√ MPEG4 Video

Applications: Multimedia applications, Internet appliances, video security systems, videophones, consumer equipment, video servers, etc.



MPEG4 standard breaks down complex multimedia data into individual video and audio objects. Each object comes from synthetic or natural environment. An effective encoding method is used for every different object type.
From the "MPEG4 simple profile" video decoder to the complex audio-visual scene description layer, Ateme's algorithms offer you the opportunity to address the right multi-media solution for your application.

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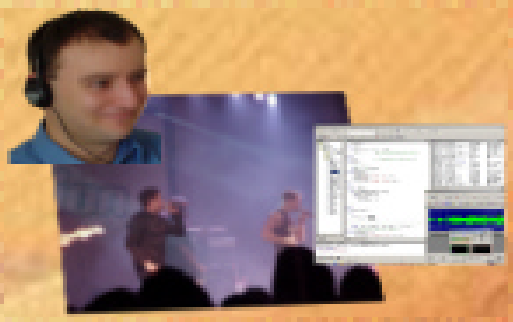
AUDIO COMPRESSION ALGORITHMS

√ MPEG4 - AAC

Applications: *Digital television, music download via Internet, listening to music from the Internet, multilingual video, etc.*



30% more powerful than MP3 in terms of quality/ bit-rate ratio, MPEG4 - AAC is developed for high quality sound compression. Processing power is optimized on the Texas Instruments 'C6000 DSP family.
Compatible with MPEG2 - AAC, MPEG4 - AAC software decodes in real-time on the 'C6701 DSP. Moreover, our algorithm offers Twin VQ decoder option, improving quality for very low bit-rate (less than 8 Kbit/s) in this way.
AAC is opened to different uses such as: several profiles are available, adaptable bit-rate from 8 Kbit/s, selection of samples frequency (8 to 96 kHz), quality options (PNS, TNS) and 48 channels.

√ MPEG4 - CELP

Applications: *Portable equipment, Internet applications, video-conference, video-security, aeronautics or military transmissions,etc.*

MPEG4 - CELP is fully dedicated to voice compression in real-time. This new generic algorithm allows different uses and applications, overtaking all CELP implementations options. Processing power is optimized on the Texas Instruments 'C6000 DSP family. MPEG4 - CELP on DSP architecture reduces costs and optimizes performances for embedded real-time systems. Flexible software allows different uses such as: layout bit-rate (from 3.85 to 23 Kbit/s), selection of samples frequency (8 or 16 kHz), excitement mode (MPE or RPE), tape width (3.3 or 7 kHz), LPC transmission control, and others.

ENGINEERING SERVICES

FPGA realization

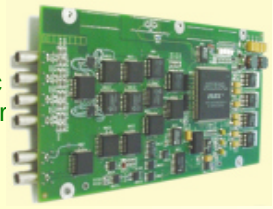
ACAP
Altera Consultants Alliance Program

TI Third Party Network Member
DSP
TEXAS INSTRUMENTS

DSP real time software

Our engineering departments are ready to adapt our products to your system requirements.

Specific daughter card



PC software

Specific system designs

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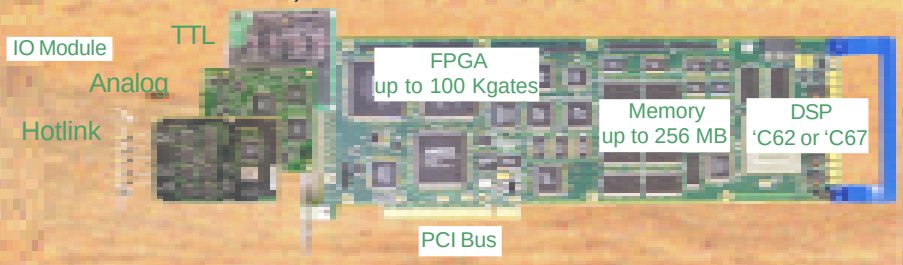
ACQUISITION FOR PCI

√ ADR128 C6000

ADR128-C6X is a PCI-based system used to capture and process data. It supports data rates up to 250 MB/s, using dedicated hardware and software processing capabilities.

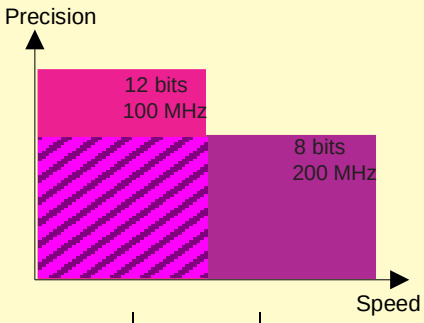
Thanks to its modular structure, it can easily be connected to all kinds of sensors and signals (digital buses, analog inputs, video inputs, high-speed communications links, etc).



- FPGA sources
- Development environment for DSP and PC
- Application samples

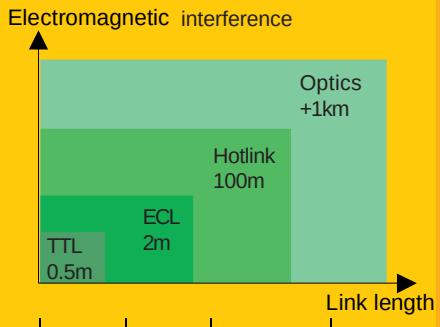
√ IO Modules

ANALOG



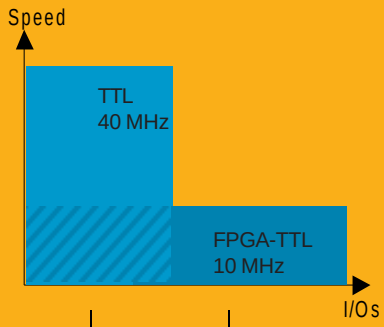
	12 bits	8 bits
Frequency (MHz)	100	200
Precision (bits)	12	8
Inputs	2	1
FPGA (pre-process)	Yes	Yes
Reference	ANA12-IO	ANA8-IO

DIGITAL *Serial*



	TTL	ECL	Hotlink	Optics
Frequency (MHz)	40	320	330	266
Inputs	1	2	4	1
Outputs		1	1	1
FPGA (pre-process)	No	Yes	Yes	No
Reference	TTL-IO	ECL-IO	HOTLK-IO	OPT-IO

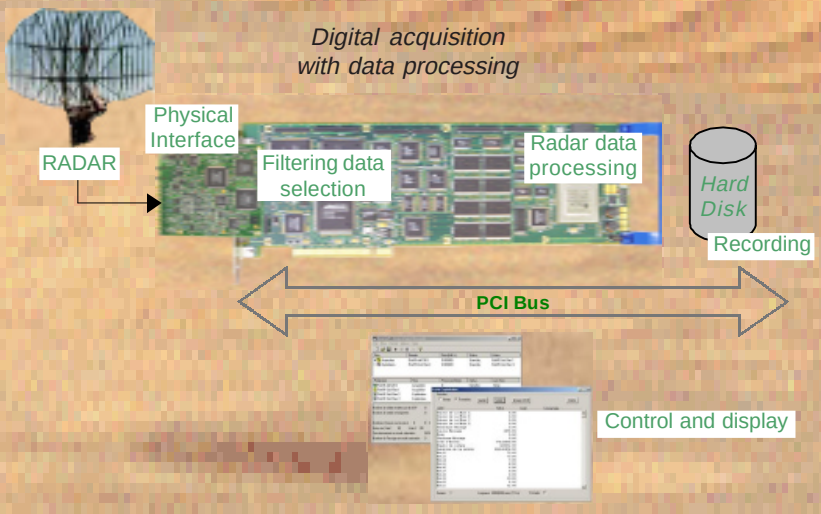
DIGITAL *Parallel*



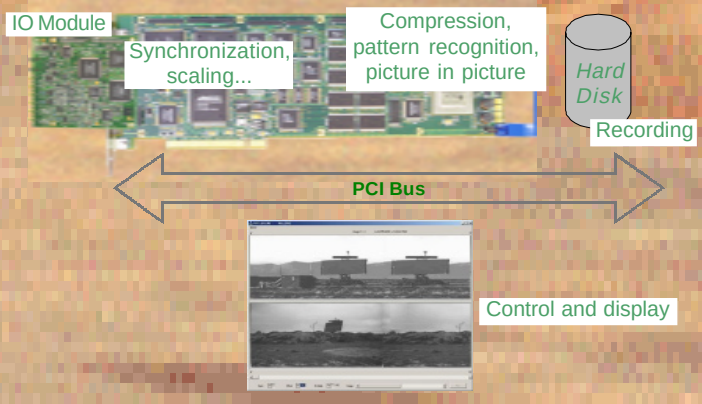
	TTL	FPGA-TTL
Frequency (MHz)	40	10
I/O Bus (32 bits)	1 (8 b address)	3
TTL GPIO	4	0
FPGA (pre-process)	No	Yes
Reference	TTL-IO	FPGATTL-IO

√ Applications

Digital acquisition with data processing



Imaging application with real time processing



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DIGITAL RECORDERS

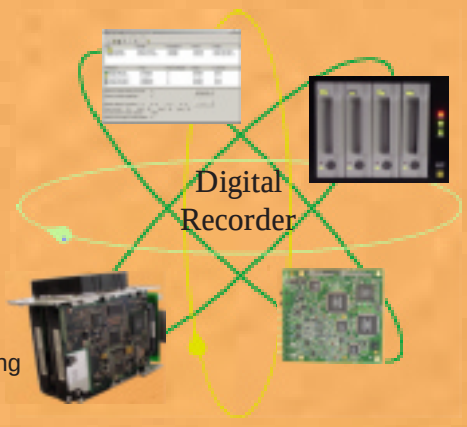
√ Applications

This high speed digital recorder is used for data acquisition (analog, video, digital) with real time processing.

Main advantages:
- High acquisition rate
- Large storage capacity
- RAID security features

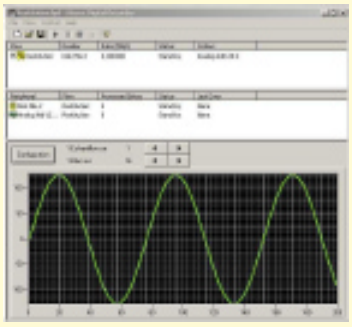
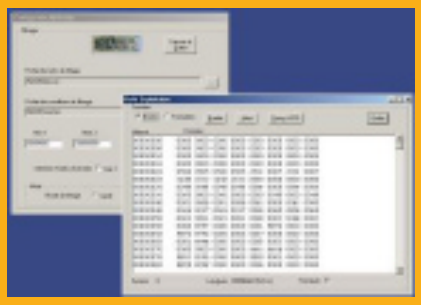
Real time processing:
- Data selection
- Compression
- Signal processing

Main Use:
- Experimental data storage
- Posteriori data processing
- Reference performances recording
- Sequences simulation, ...



√ Products

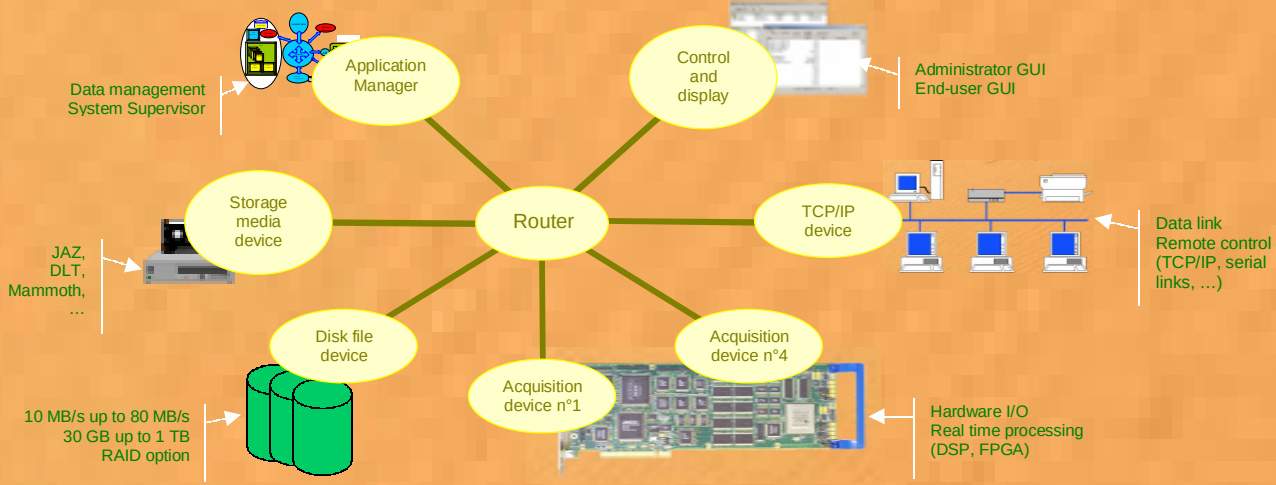
Ateme' s Digital Recorder is a complete range matching all acquisition requirements: ANALOG, VIDEO and DIGITAL.

	DIGITAL ANALOG RECORDER	DIGITAL VIDEO RECORDER	DIGITAL DATA RECORDER
Graphical User Interface			
Inputs	1 or 2 channels 8 or 12 bits Up to 200 MHz	Video PAL or NTSC Infrared sensor Line-scan cameras	ECL, hotlink or optical interface 300 Mbits/s serial links Up to 16 links
Main abilities	External or internal triggering External or internal clock Signal processing (DSP)	Real time compression (DSP) Scaling (FPGA or DSP) Overprinting (DSP)	Real time pre-processing (DSP) Filtering (FPGA or DSP) Windowing (FPGA)

√ Configurations

Its integrated format covers many uses from design simulation to experimental uses and can be supplied in different formats: TOWER, INDUSTRIAL, TRANSPORTABLE and RUGGEDIZED.
Any configuration is possible on request, with customization of software and hardware where specific real-time processing and application are needed.

Recorder system architecture example :



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