ULP COM

A new form factor
for the third IT platform

optimized for
ARM and SOC

At ADLINK, We CARE

ADLINK
TECHNOLOGY INC.

The third platform, reason for change

- We are not just moving from CISC to RISC on Computer on Modules because of lower power and a better price.
- We are in the middle of a major IT paradigm shift
- ARM in Smart Phones and Smart Tablets constitute “disruptive technology” and will be driving change and innovation in the embedded market
- To go forward we have to break with the past and rethink our whole strategy

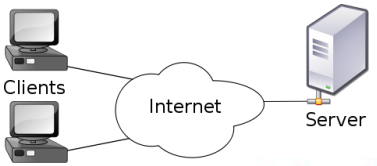
Disruptive technology

"Innovate or be left behind"

- The first IT platform
  - Mainframes and terminals
    single source environment (Processor + OS)

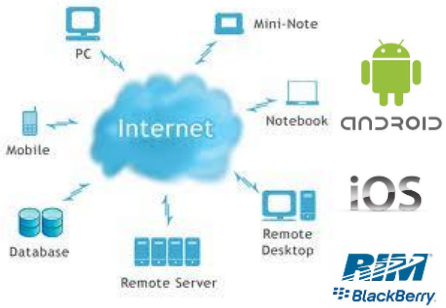
IBM, CONTROL DATA, Bull, WANG, digital, NCR, UNISYS

- The second IT platform
  - the client-server model
    dual source environment (Wintel : Microsoft Windows and Intel x86)



Novell NetWare, hp, acer, Microsoft Windows, DELL, COMPAQ

- The third IT platform
  - Mobile devices and clouds
    multiple source for OS,
    and multiple sources for processors



Google, SAMSUNG, Texas Instruments, ARM, amazon.com

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Do we need a new form factor for ARM ?

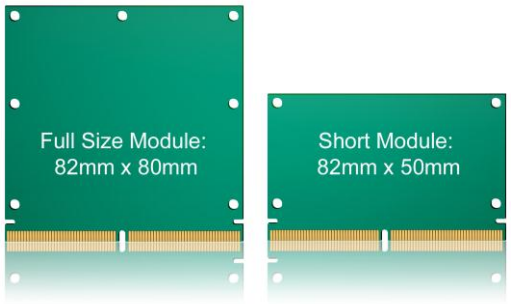
would you innovate and tailor it to its specific needs ?

Do we need a new form factor for ARM ?

or would you reuse an existing x86 form factor ?

ULP COM

Ultra Low Power Computer on Module for ARM or SOC



Sizes : 82 x 50mm or 82 x 80 mm

BtB Connector : 314-pin MXM 3.0 type

ULP COM Standard Definition

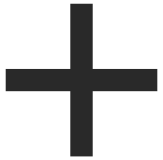
- **A Kontron initiative** with participation from Adlink
- **Processor targets :** ARM/RISC & SOC
- **Module Sizes** : short 82x50 mm or full 82x80 mm
- **BtB Connector** : low cost 314-pin MXM 3.0
- **Display support** : RGB, LVDS, HDMI, Displayport
- **OS Support** : Linux, Android, Windows CE, Windows 8, VxWorks and QNX.“
- **An Open Standard** : ULP COM is moving to the newly formed SGET

BtB pinout supports

314 pins offering maximum flexibility

Typical ARM/RISC signals

24-bit RGB Video
Serial Camera
Parallel Camera
2x USB 2.0
1x USB / USB OTG
LAN
SDIO 4-bit
eMMC 8-bit
4x UART
2x CAN
2 x SPI
5x i2C
Multiple I2S
GPIO
Boot Select
Singe Power Voltage
Power Management



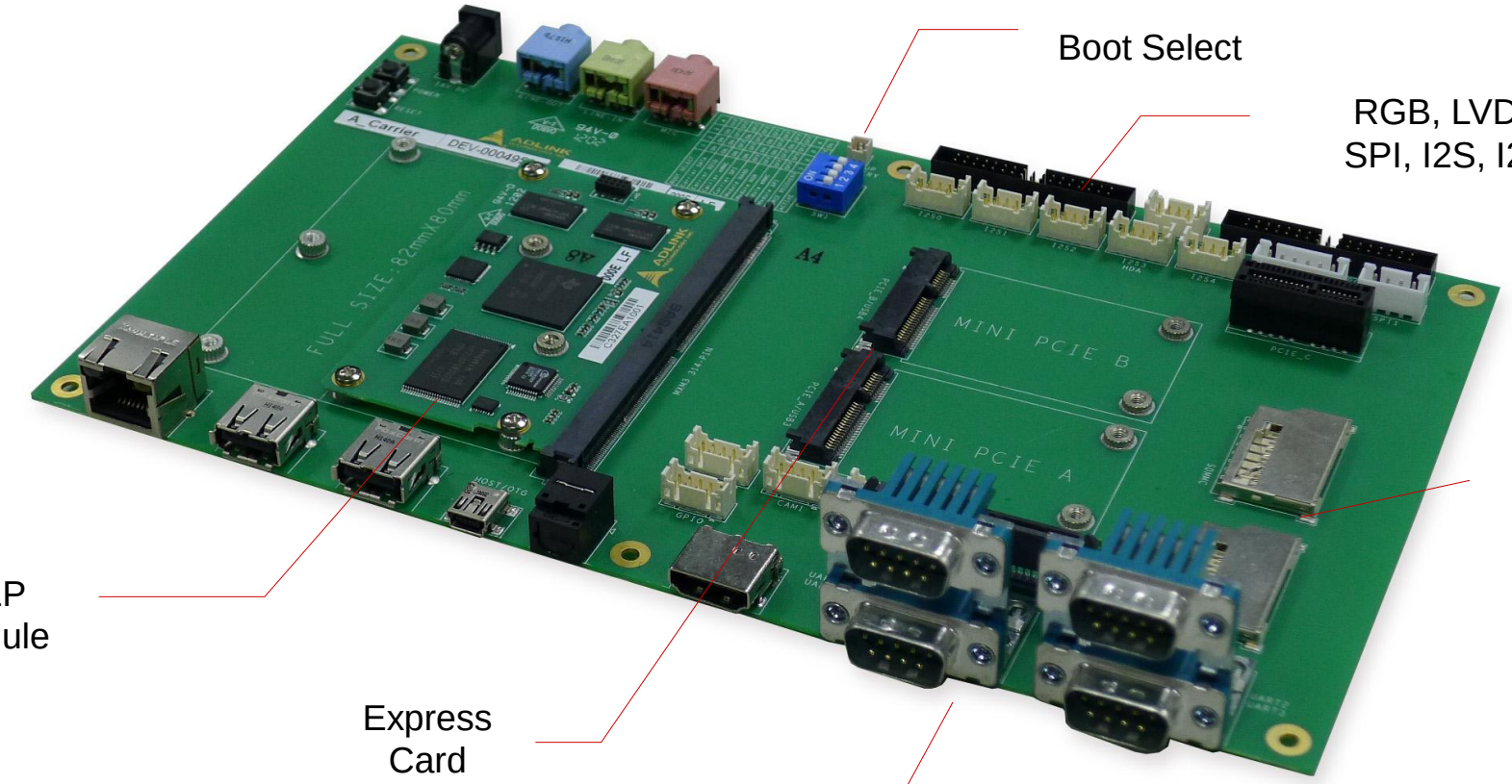
Modern Interfaces

24-bit LVDS
HDMI
Displayport
3x PCIe
SATA
GbE LAN
HD Audio
SPDIF

And Future ones

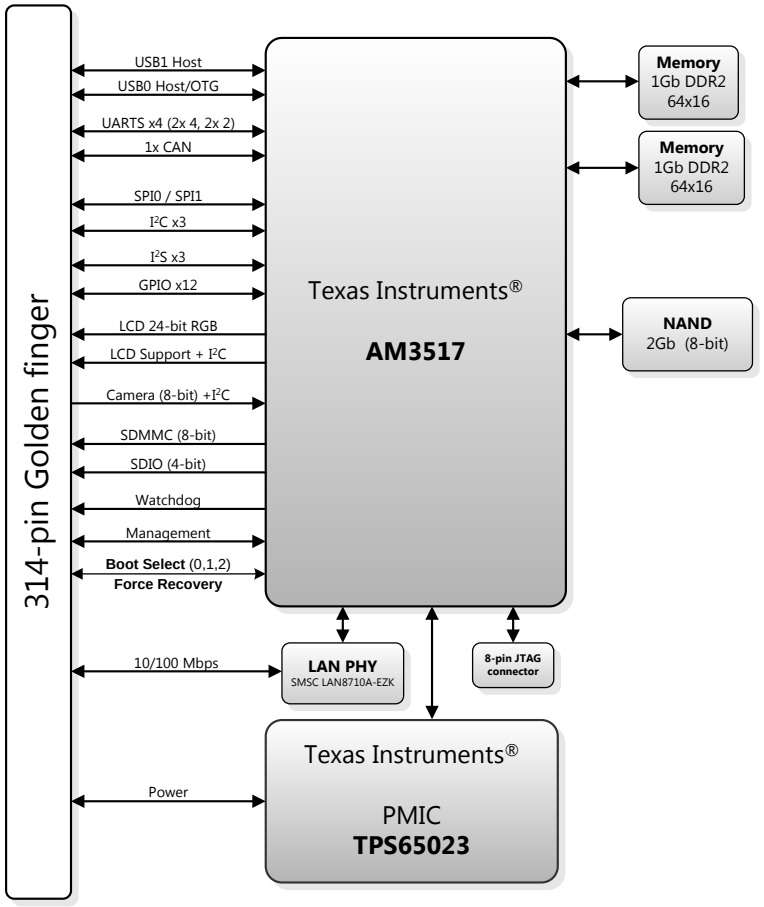
Secondary GbE
USB3.0
DSI
Fieldbus
Reserved Pins

TI Sitara AM3517 Development Platform

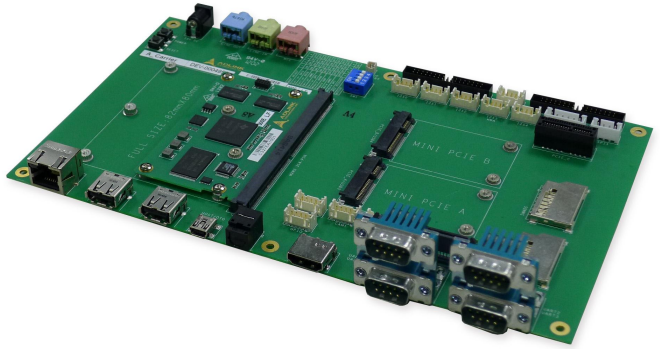


Small size ULP-COM : AM3517

- **Processor**
  - TI Sitara AM3517 Cortex-A8 processor @ 600 MHz
  - Power-VR SGX530 3D graphics
- **Memory**
  - 256 MB DDR2 SDRAM
  - 512MB NAND Flash
- **Video**
  - Parallel RGB supporting 8/16/24bpp resolutions up to 2048x2048
- **Audio**
  - 16-bit linear audio stereo DAC
  - 16-bit linear audio stereo ADC
  - Microphone input
  - Line out
- **Network**
  - 10/100 Base-T Ethernet controller
- **Serial**
  - TDM interface (over McBSP1)
  - 2 x SPI interfaces, I2C interface
  - 4 UART ports, CAN Bus
- **USB**
  - 2 x HS USB 2.0 host
  - HS USB 2.0 OTG



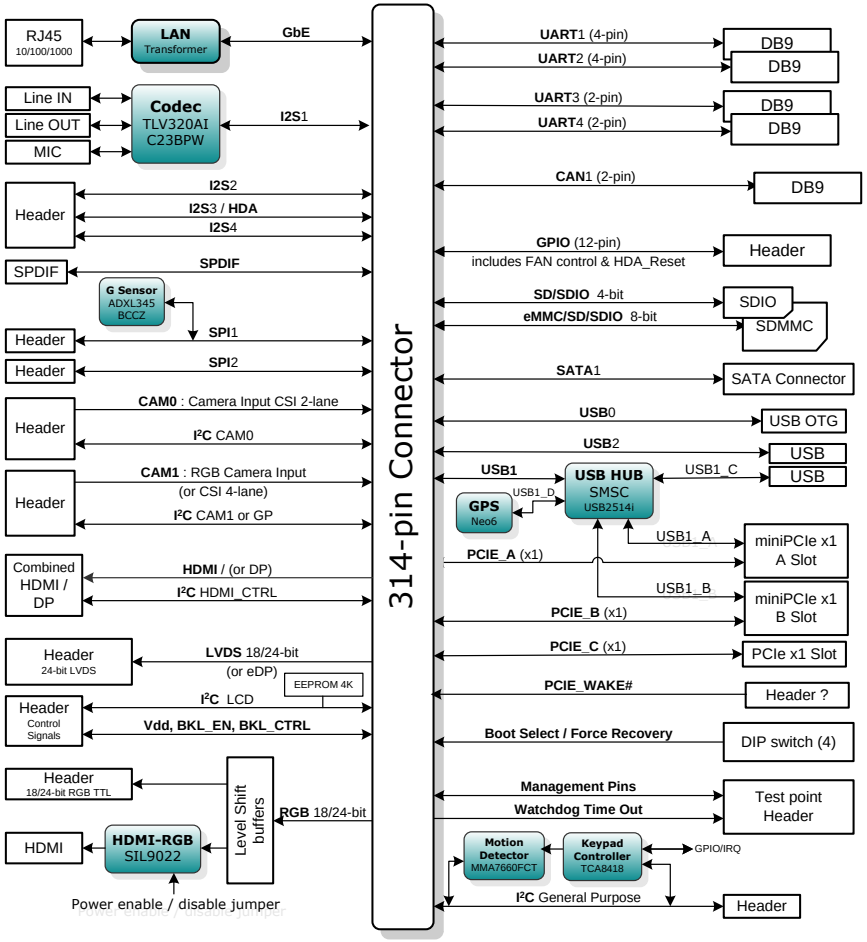
Reference Carrier with additional IP



IP Blocks on the Carrier

Audio Codec TLV320AIC23BPW
GPS ublox Neo6
G Sensor ADXL345BCCZ
Motion Detector MMA7660FCT
Keypad TI TCA8418
Touchscreen TSC204061PW
Wifi & Bluetooth Jorjin WG7310

and
RGB to HDMI : SIL9022
USB HUB SMSC USB2514i



ADLINK's model for ARM suport

IP Level

BSP Level

Application Level

- Hardware IP block (module+carrier IP)
- Software IP (Bootloader / Linux Kernel)
  - Linux Kernel development (back to kernel.org)

- Second Level
  - BSP (winCE, Android, Vxworks, QNX, ..)



- Application using either module + software IP or hardware IP + software IP
- Driver development and qualification

ADLINK ULP Roadmap

In Production
Under Design
Consideration / Planning

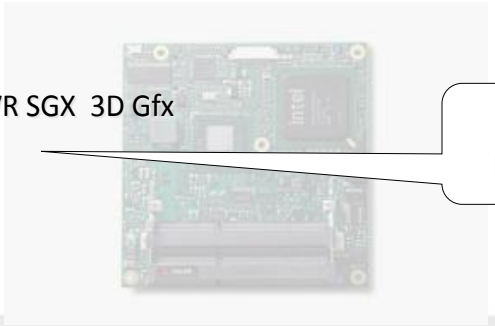
xxx-T3
NVIDIA® Tegra® 3 with Quad Cortex-A9 at 1.3 Ghz
1 GB DDR3, PCIe, SATA, HDMI, GbE

Estimate Q2 2013

xxx-387x
TI Sitara AM3874 up 1.5 GHz + PowerVR SGX530 3D Gfx
1 GB DDR3, PCIe, SATA, HDMI, GbE

Estimate Q2 2013

xxx-3517
ARM Cortex 8 up 1 GHz + PowerVR SGX 3D Gfx
512 MB DDR2, HDMI, GbE



samples September 2012
production December 2012

COM Express

ADLINK TECHNOLOGY INC.

감사합니다

Danke schön

Thank you

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謝謝

Gracias

3Q

Moito Brigado

Merci Beaucoup

Dank U wel