Intel Calpella Platform – K52JT

- Calpella Platform Block Diagram
- Ibex Peak-M Overview
- K52JT Architecture
- [Repair reference] - No power
- [Repair reference] - No display with power is on
- [Repair reference] - Vcore Problems
- [Repair reference] - Battery Charging problems
- [Repair reference] - LAN problems
- [Repair reference] - Audio problems
- Q & A

www.aitech1.ru

ASUS®
Inspiring Innovation • Persistent Perfection

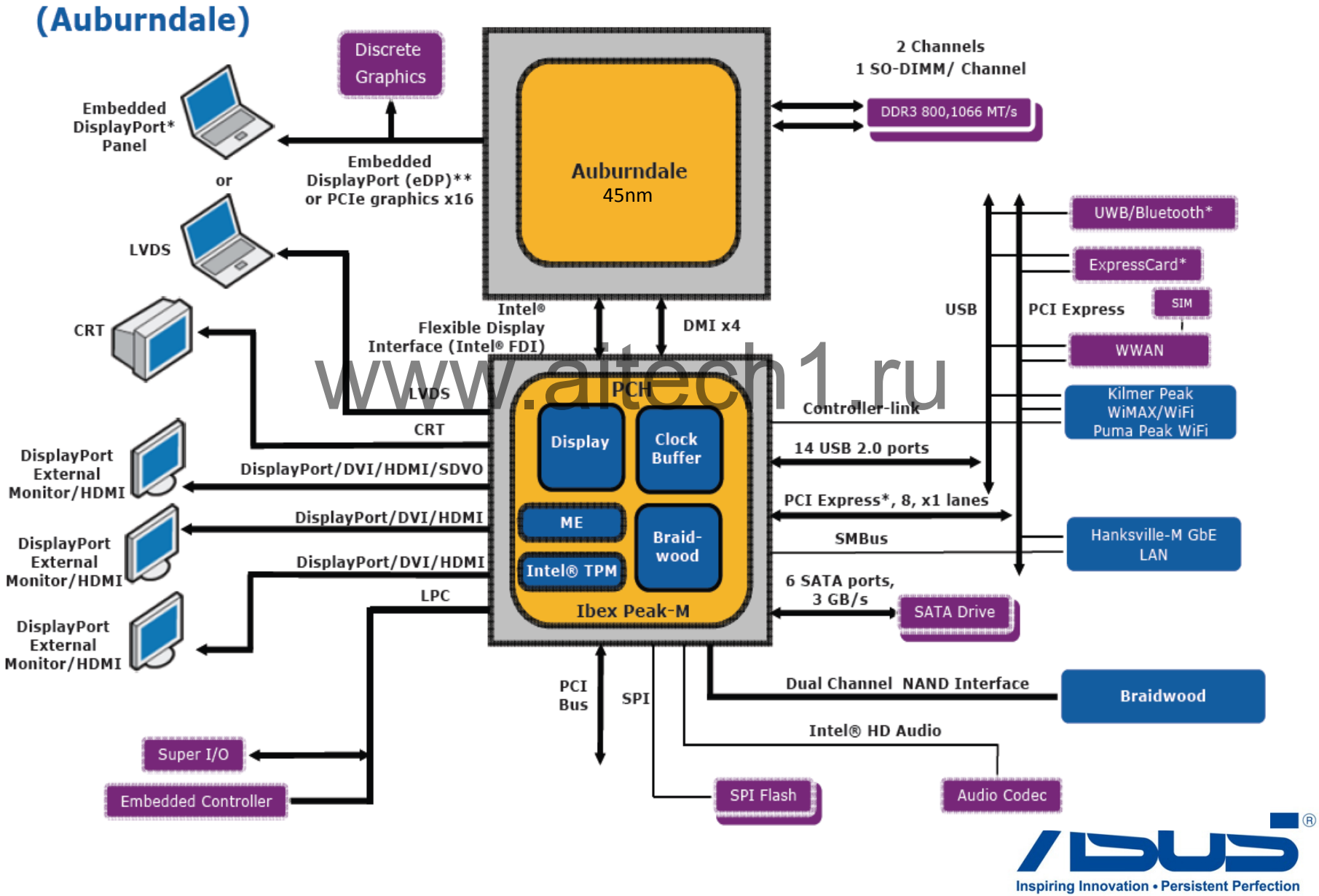
Intel Calpella Platform – K52JT

- Calpella Platform Block Diagram
- Ibex Peak-M Overview
- K52JT Architecture
- [Repair reference] - No power
- [Repair reference] - No display with power is on
- [Repair reference] - Vcore Problems
- [Repair reference] - Battery Charging problems
- [Repair reference] - LAN problems
- [Repair reference] - Audio problems
- Q & A

www.aitech1.ru

ASUS®
Inspiring Innovation • Persistent Perfection

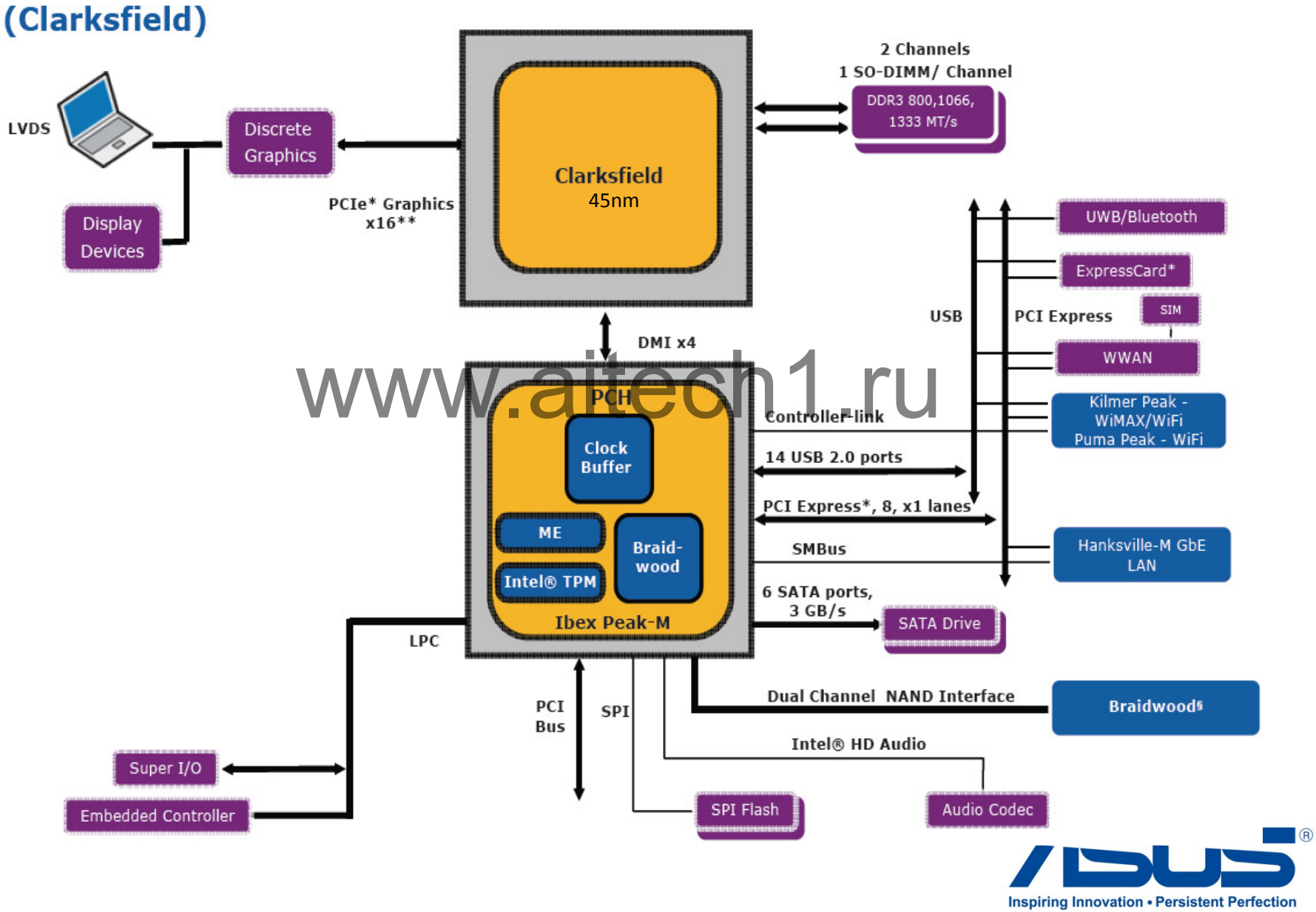
Calpella platform



www.atech1.ru

ASUS®
Inspiring Innovation • Persistent Perfection

Calpella platform



www.aitech1.ru

ASUS®
Inspiring Innovation • Persistent Perfection

Intel Calpella Platform – K52JT

- Calpella Platform Block Diagram
- **Ibex Peak-M Overview**
- K52JT Architecture
- [Repair reference] - No power
- [Repair reference] - No display with power is on
- [Repair reference] - Vcore Problems
- [Repair reference] - Battery Charging problems
- [Repair reference] - LAN problems
- [Repair reference] - Audio problems
- Q & A

www.aitech1.ru

ASUS®
Inspiring Innovation • Persistent Perfection

Calpella PCH

14 USB ports with USB2.0 Rate Matching Hub

6 SATA ports with Port Multiplier Support & FIS Based Switching

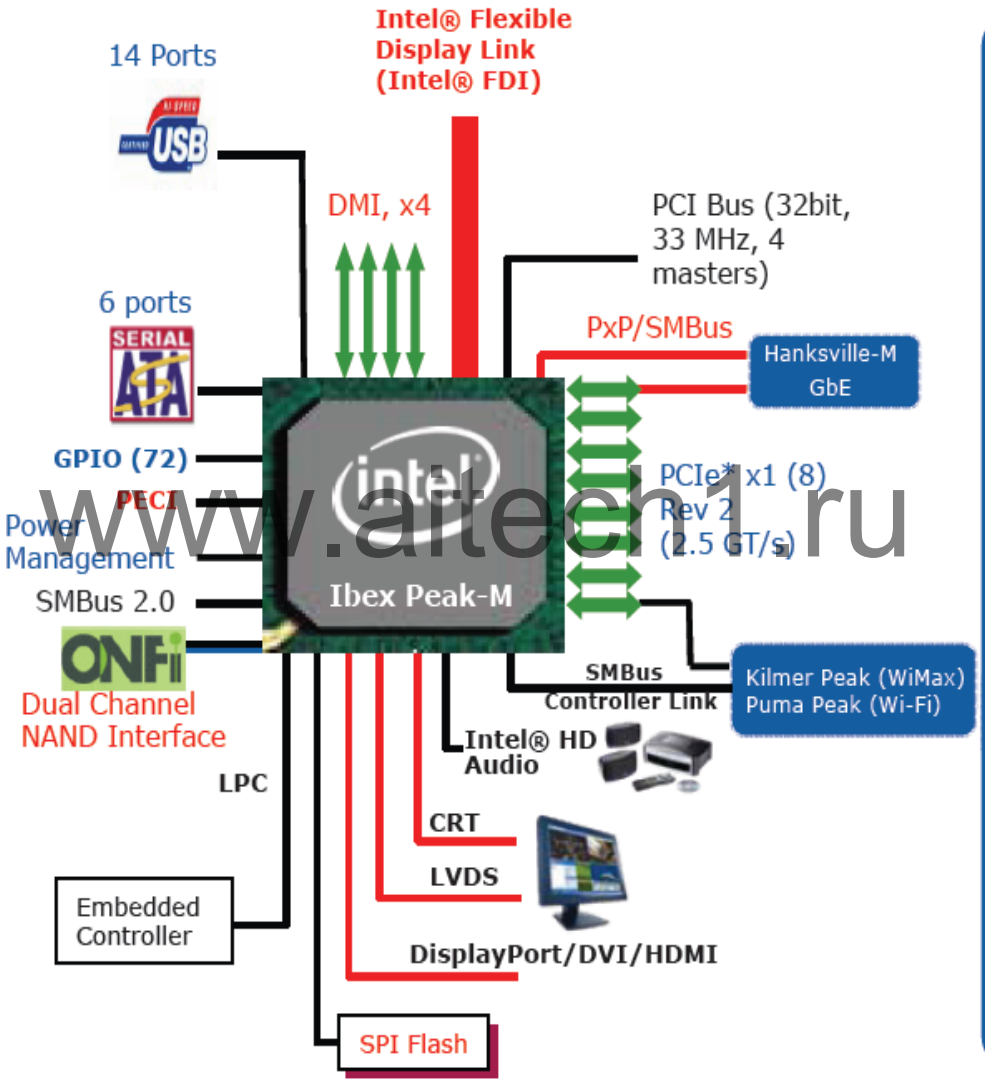
Support for eSATA Port, Command Based PM support

8 PCIe* ports – 2 more than in previous platform

1.1-V Core Voltage

PECI and Thermal Management support

Intel® VT-d Virtualized I/O Support



www.alteeh1.ru

Integrated MAC w/ LinkSec
(802.1AE, 802.1AF)

Integrated NVRAM Controller with Fast Flash support

Integrated Manageability Engine

Integrated TPM support

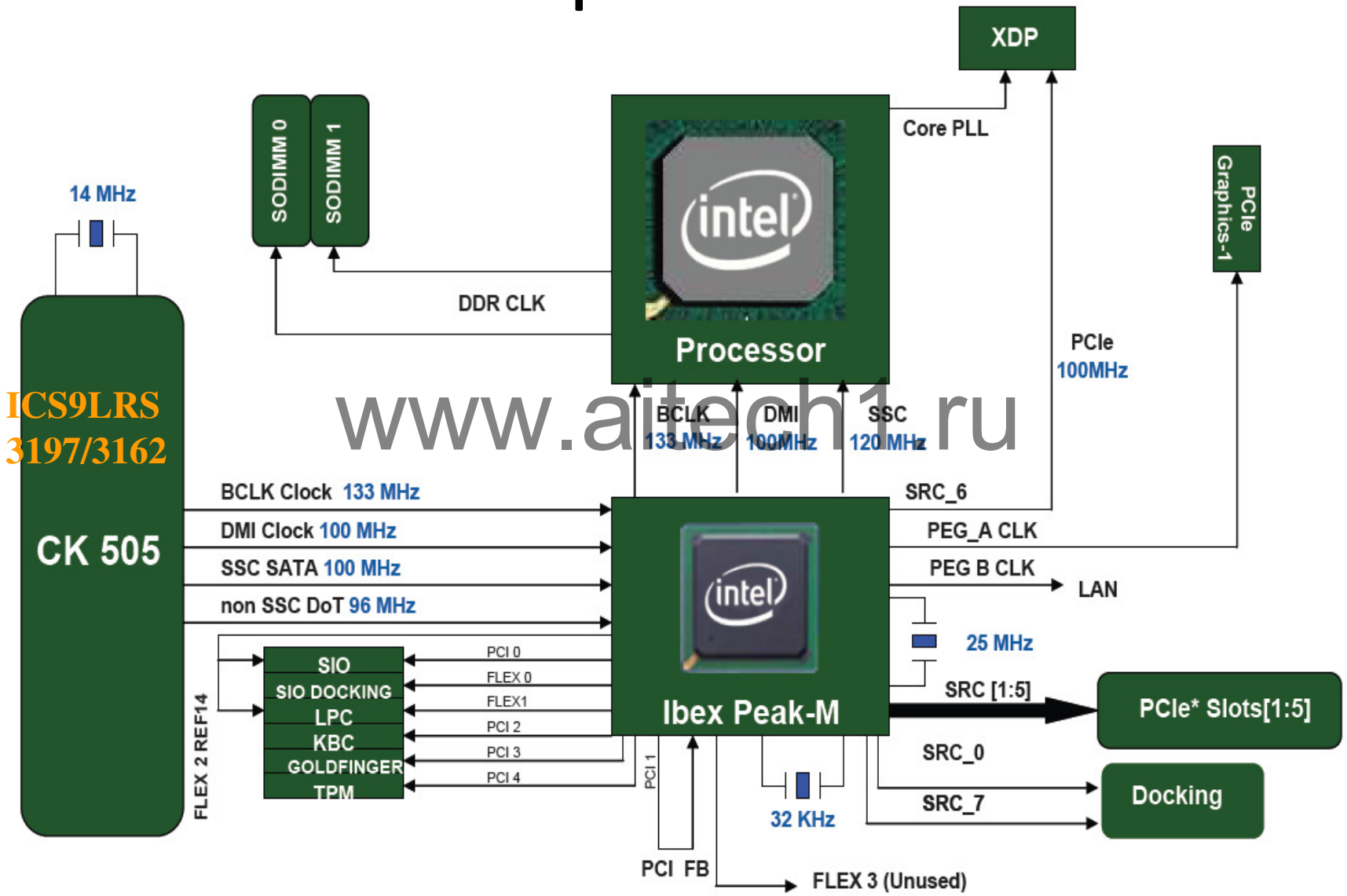
Intel® Anti-theft Technology

Buffered Clocking

Display Interfaces and Intel® FDI

ASUS®
Inspiring Innovation • Persistent Perfection

Calpella CLK



www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

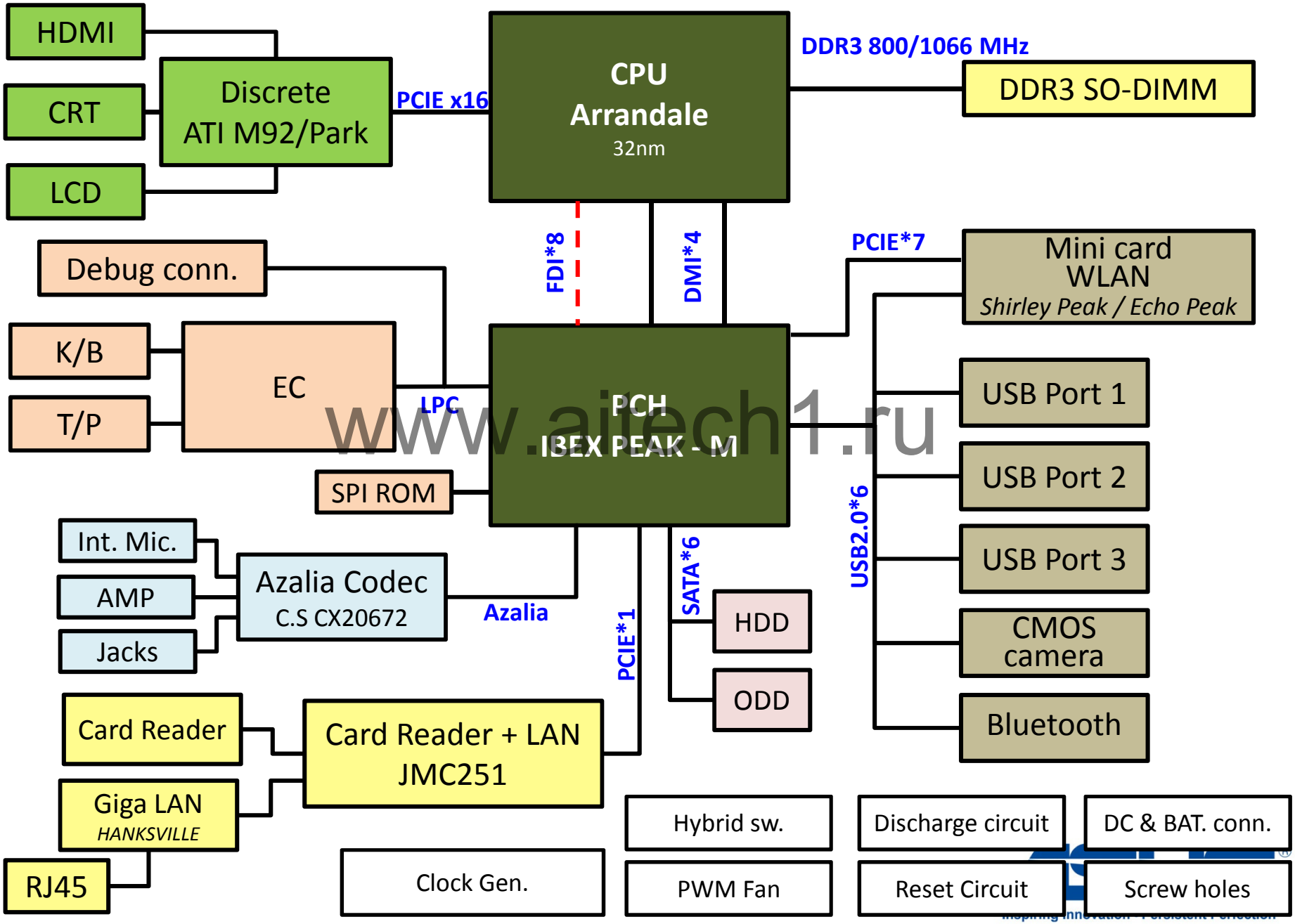
Intel Calpella Platform – K52JT

- Calpella Platform Block Diagram
- Ibex Peak-M Overview
- K52JT Architecture
- [Repair reference] - No power
- [Repair reference] - No display with power is on
- [Repair reference] - Vcore Problems
- [Repair reference] - Battery Charging problems
- [Repair reference] - LAN problems
- [Repair reference] - Audio problems
- Q & A

www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

Calpella Platform – K52JT Architecture



www.aiech1.ru

Intel Calpella Platform – K52JT

- Calpella Platform Block Diagram
- Ibex Peak-M Overview
- K52JT Architecture
- [Repair reference] – No power
- [Repair reference] - No display with power is on
- [Repair reference] - Vcore Problems
- [Repair reference] - Battery Charging problems
- [Repair reference] - LAN problems
- [Repair reference] - Audio problems
- Q & A

www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

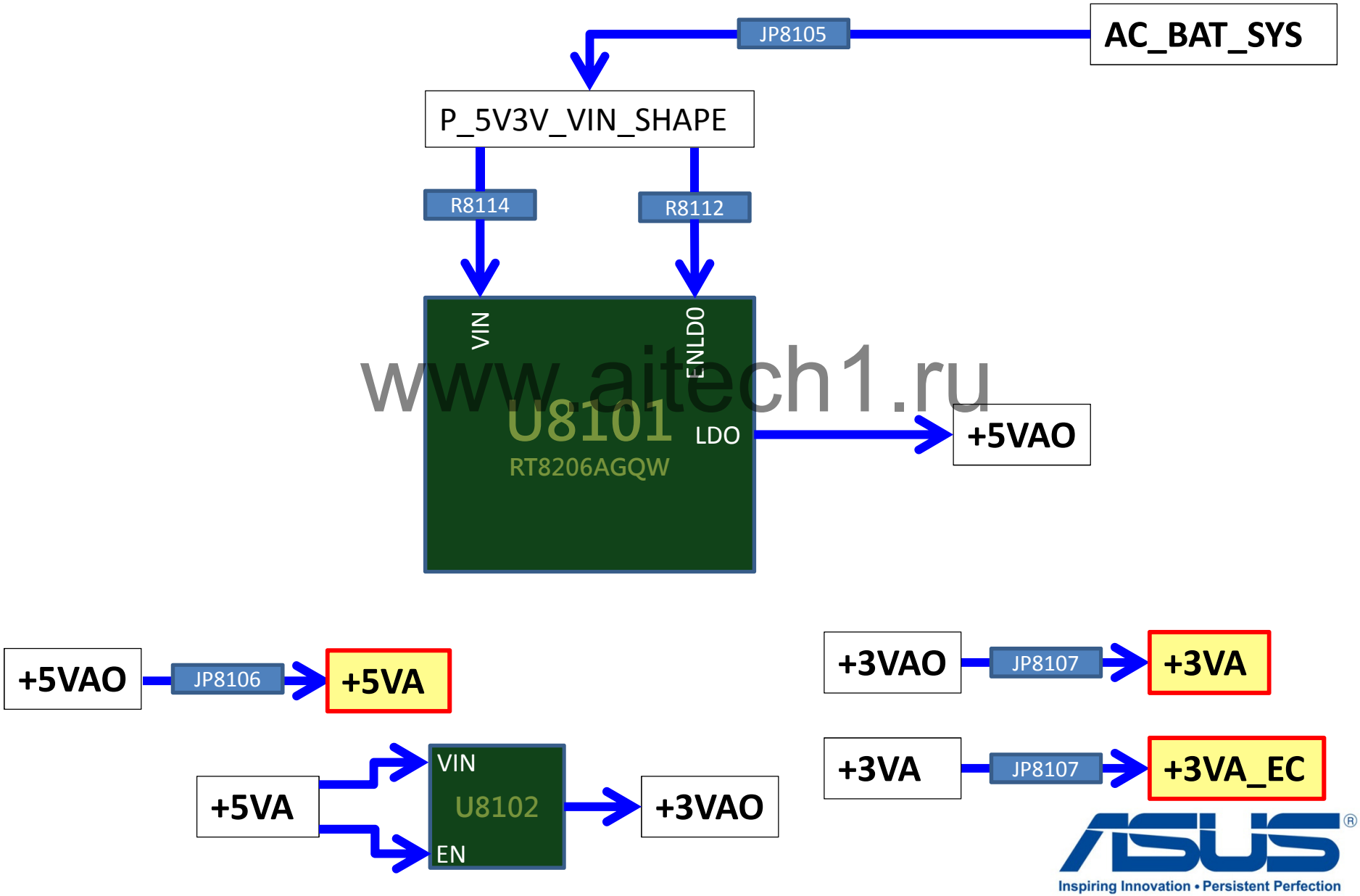
No power

- Power on sequence analysis
  - AC IN Mode

www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

➢ Power on sequence analysis *+3VA, +5VA, +3VA_EC*

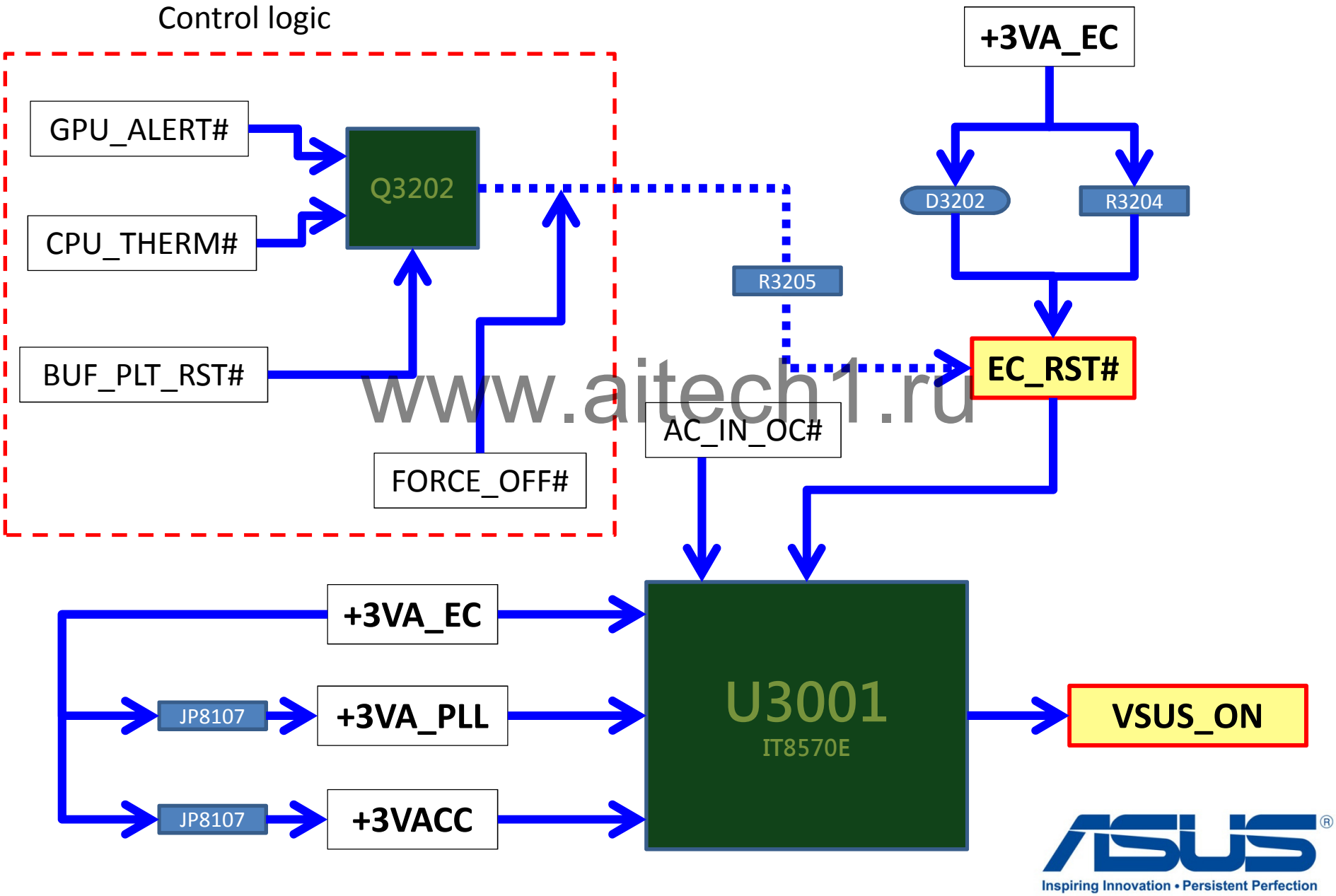


www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

➢ Power on sequence analysis

EC_RST#, VSUS_ON

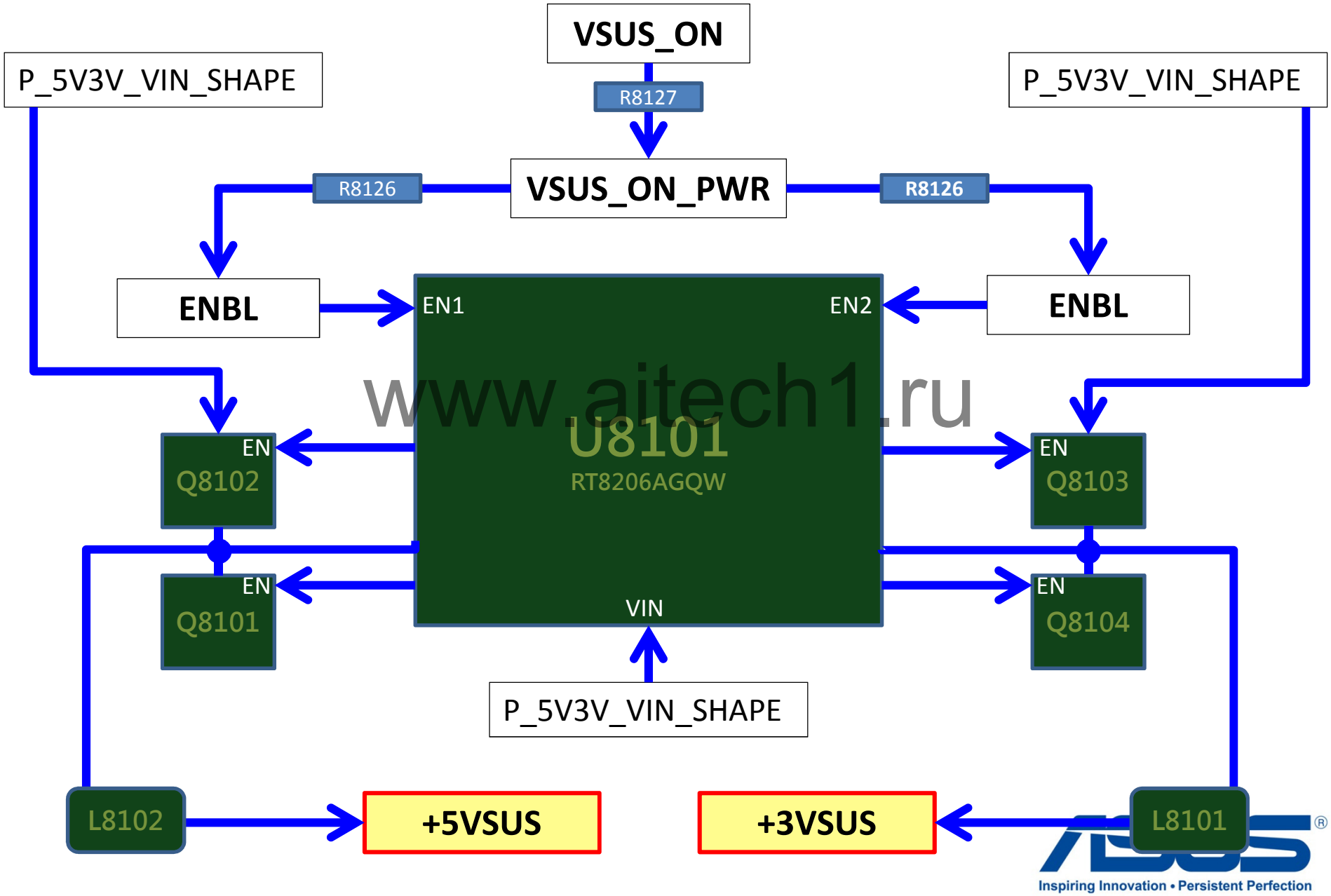


www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

➢ Power on sequence analysis

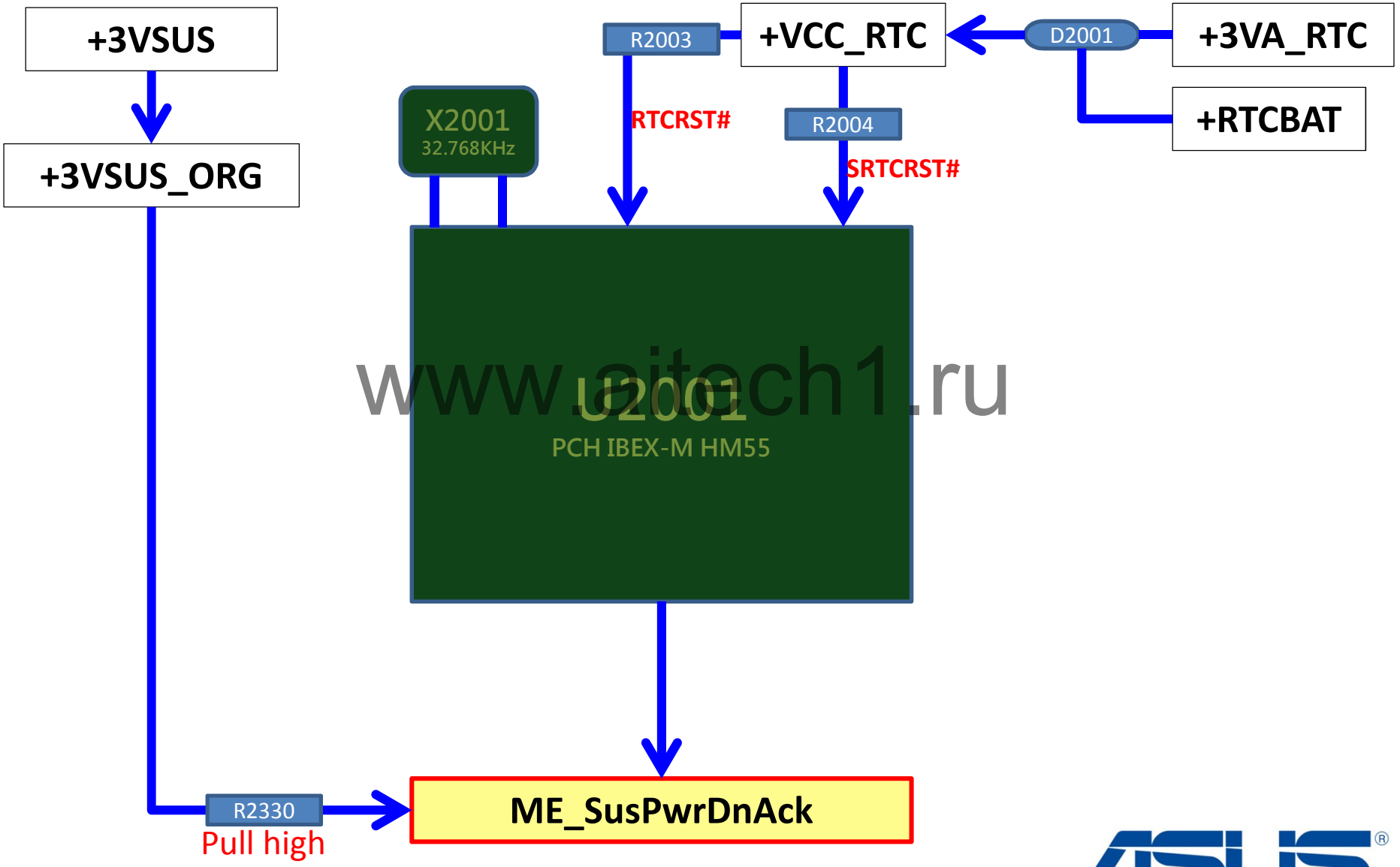
+3VSUS, +5VSUS



Inspiring Innovation • Persistent Perfection

➢ Power on sequence analysis

ME_SusPwrDnAck

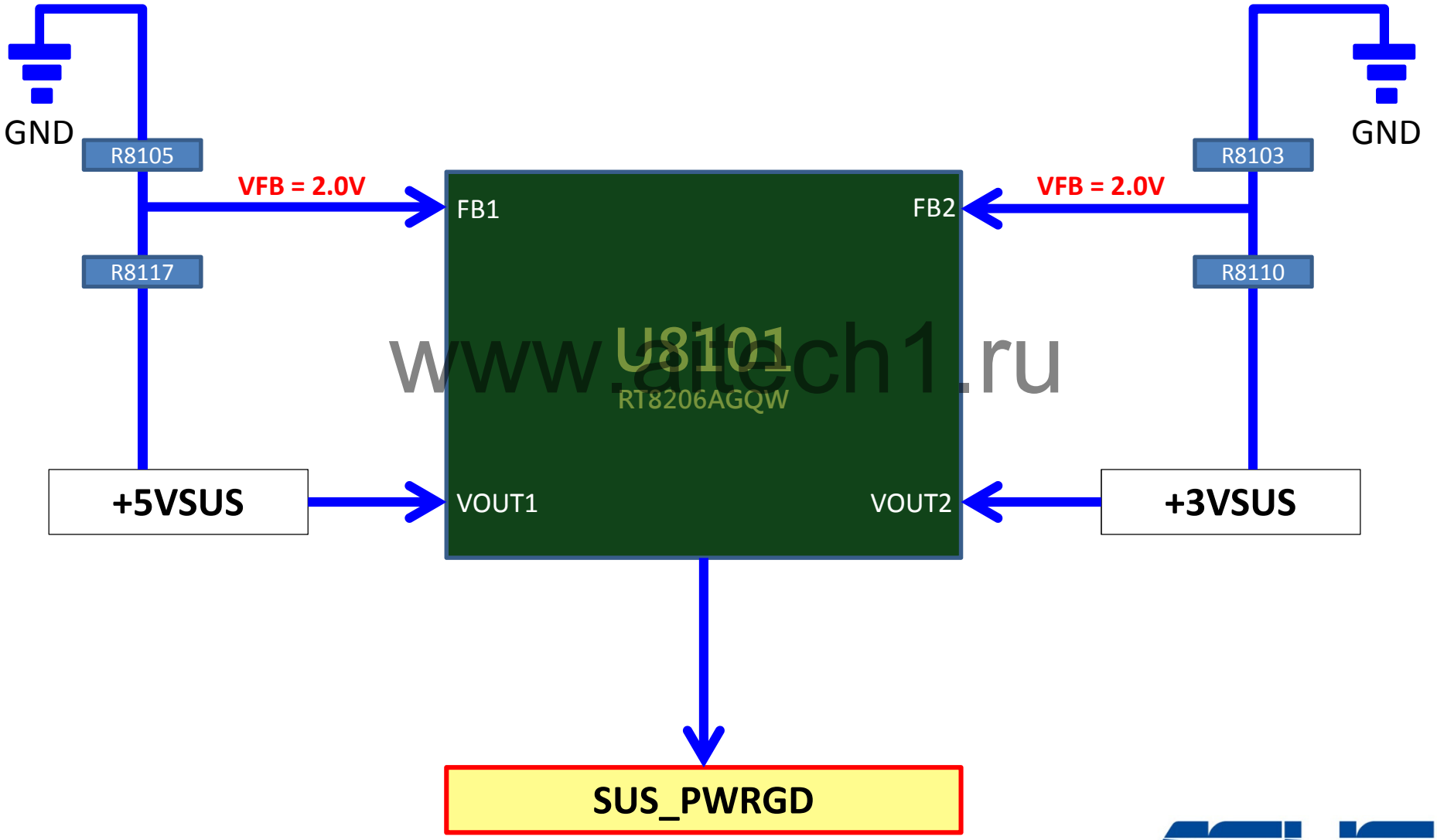


www.sitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

➢ Power on sequence analysis

SUS_PWRGD

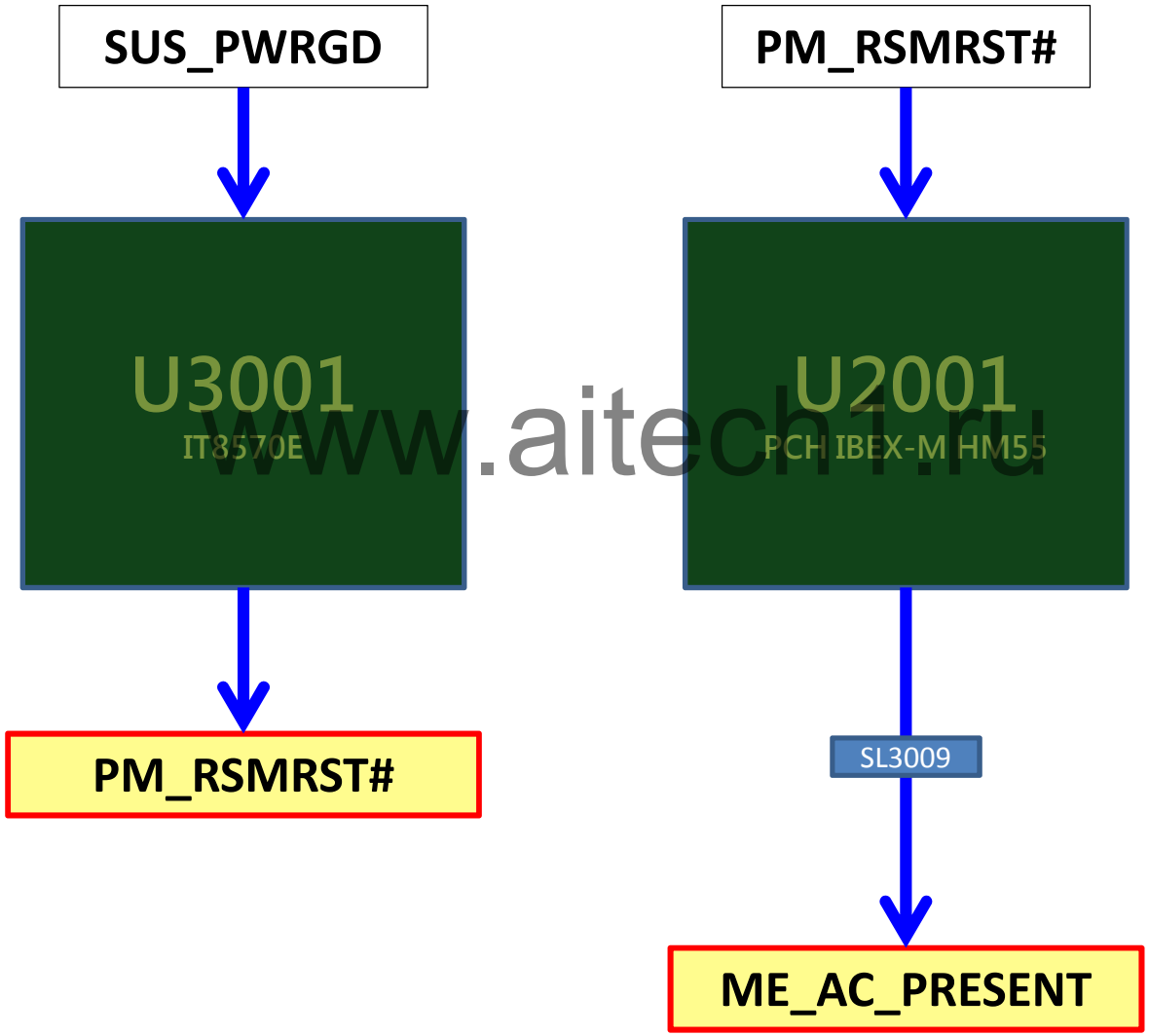


www.altech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

➢ Power on sequence analysis

PM_RSMRST#, ME_AC_PRESENT

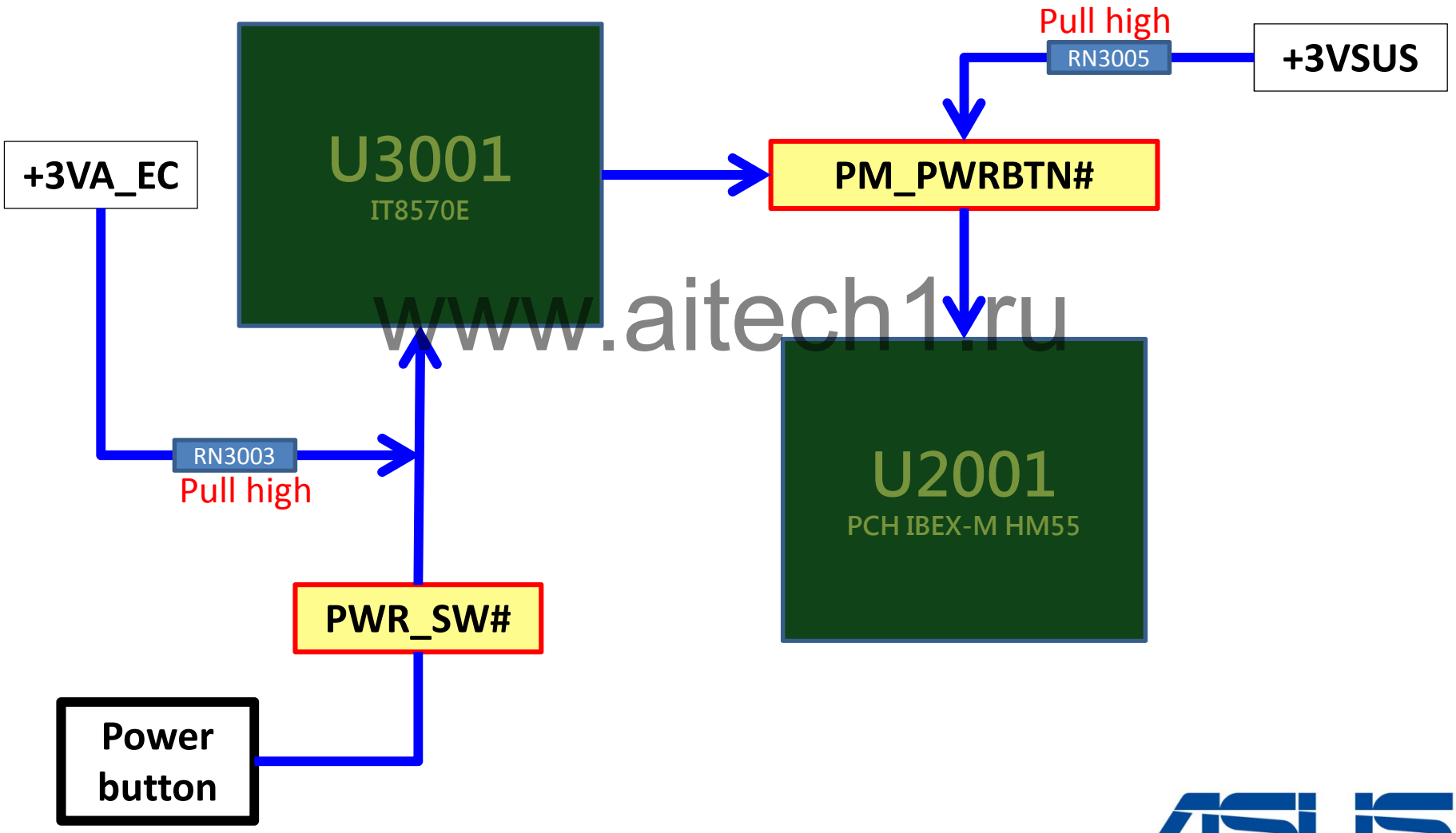


www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

➢ Power on sequence analysis

PWR_SW#, PM_PWRBTN#



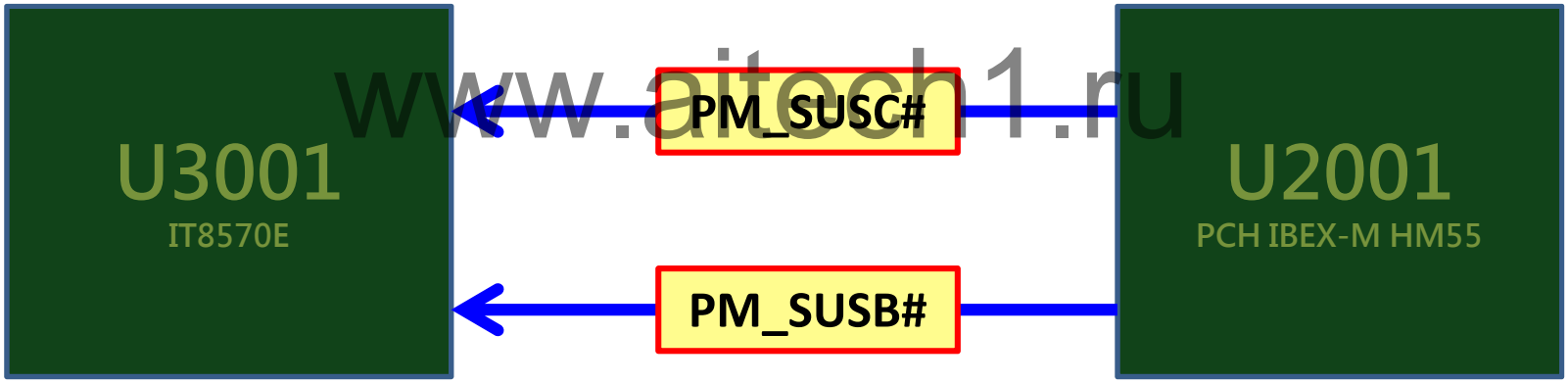
www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

➢ Power on sequence analysis

~~*ME_PM_SLP_M#*~~, ***PM_SUSC#,*** ~~*ME_PM_SLP_LAN#*~~, ***PM_SUSB#***

Deleted for iAMT



www.aitech1.ru

ASUS®
Inspiring Innovation • Persistent Perfection

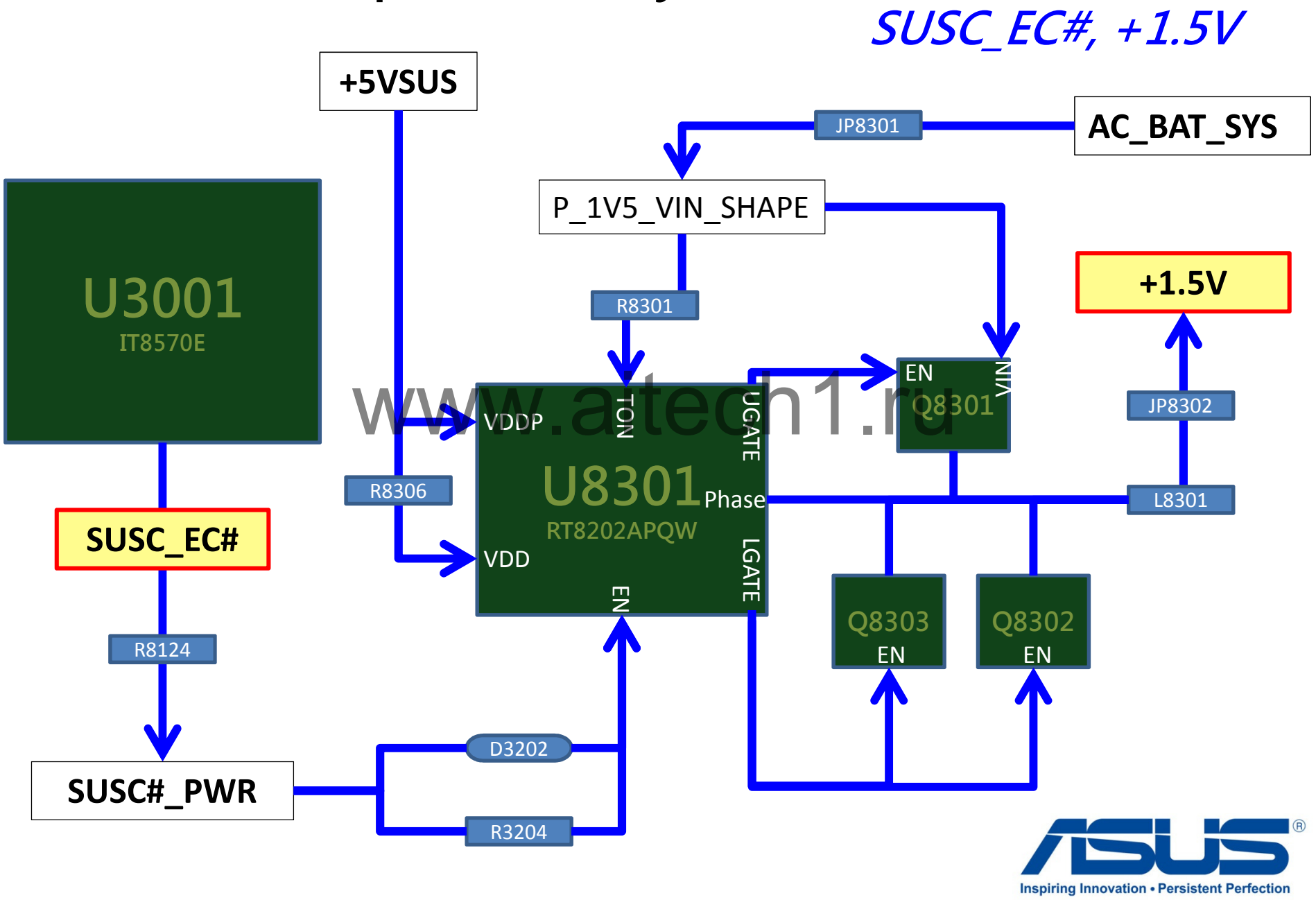
➢ Power on sequence analysis

~~+1.1VM, ME_SLP_M_EC#, +1.1VM, +3VM~~

www.aitech1 .ru

ASUS®
Inspiring Innovation • Persistent Perfection

➢ Power on sequence analysis

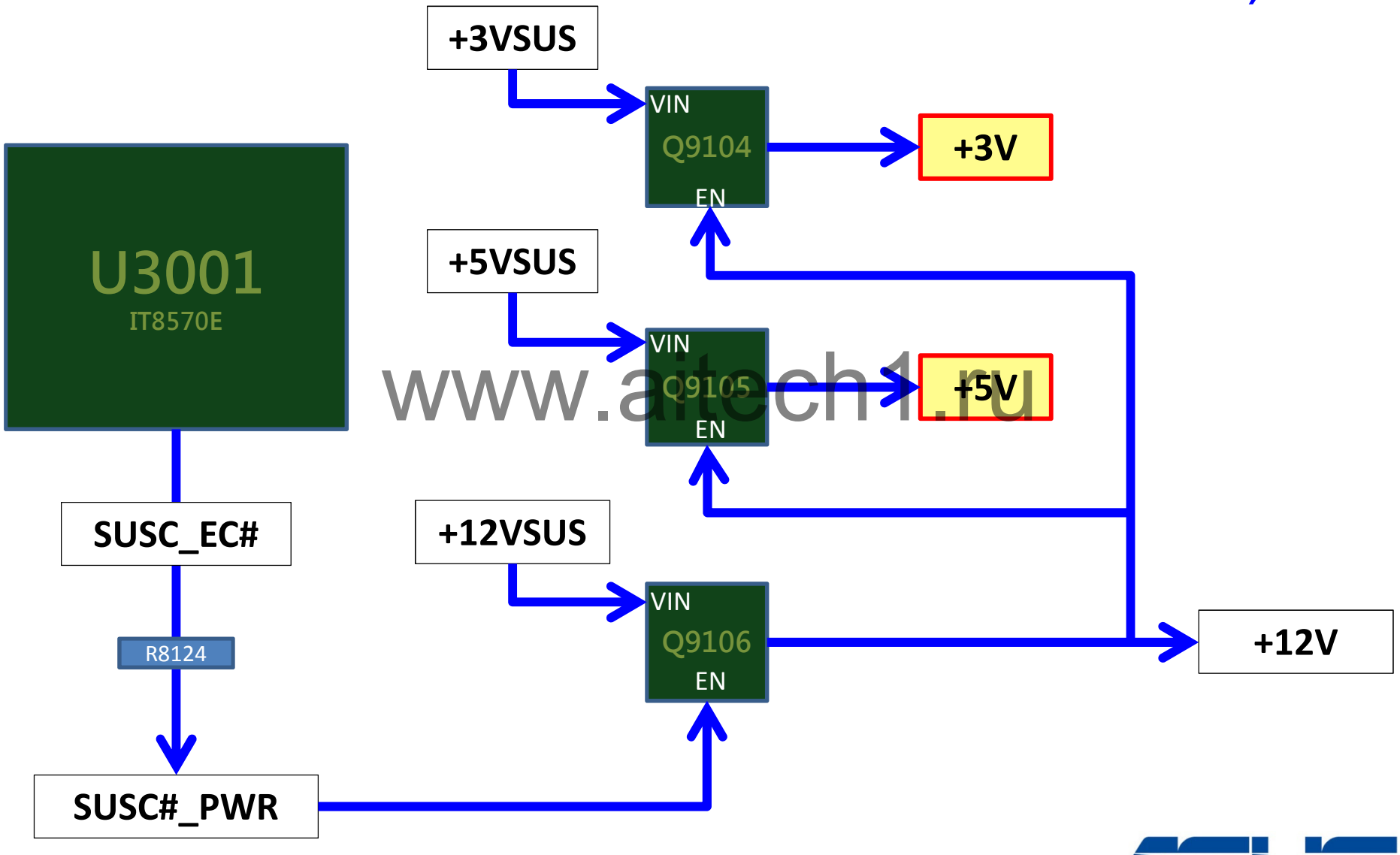


www.atech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

➢ Power on sequence analysis

+3V, +5V

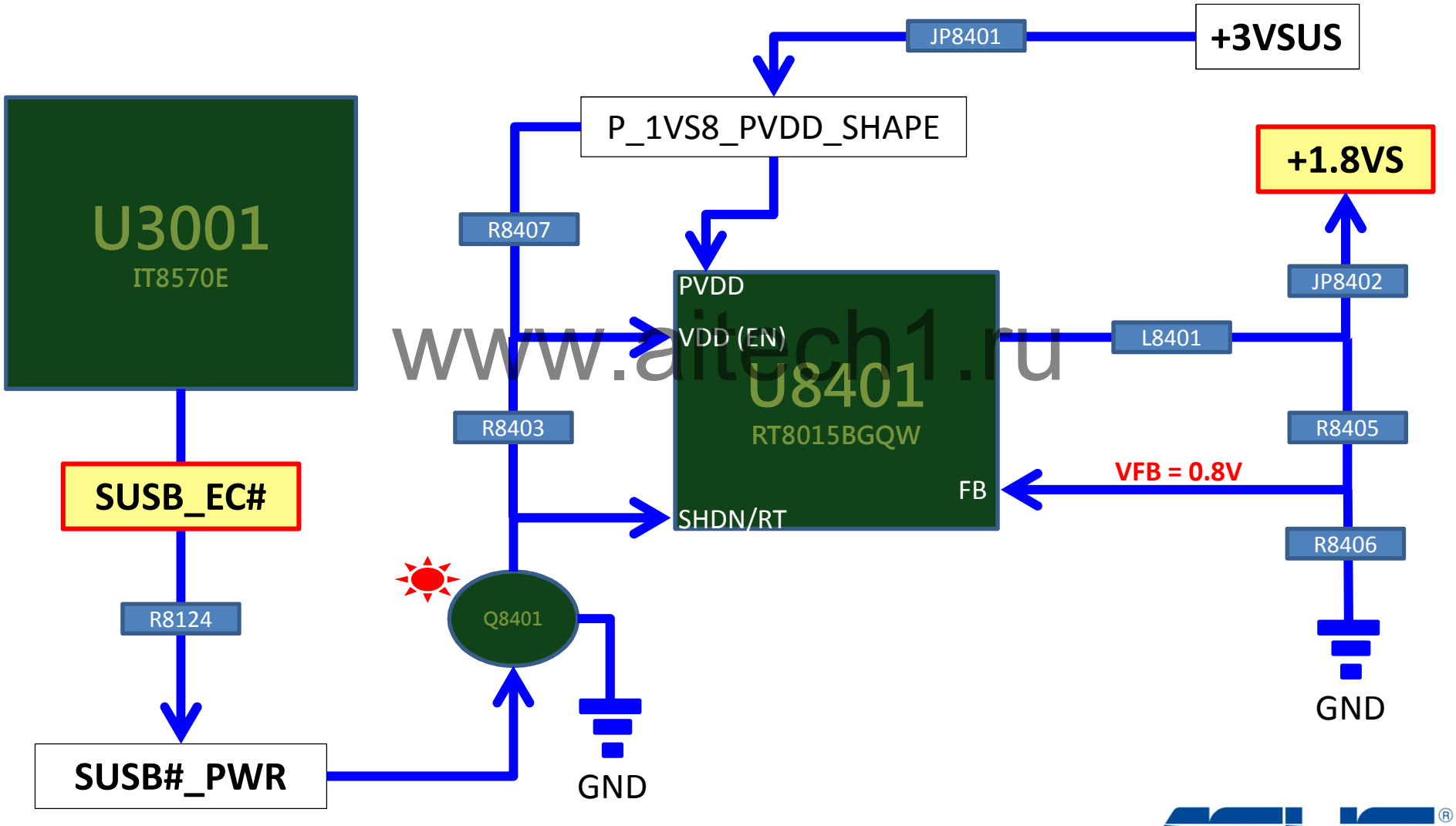


www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

➢ Power on sequence analysis

SUSB_EC#, +1.8VS



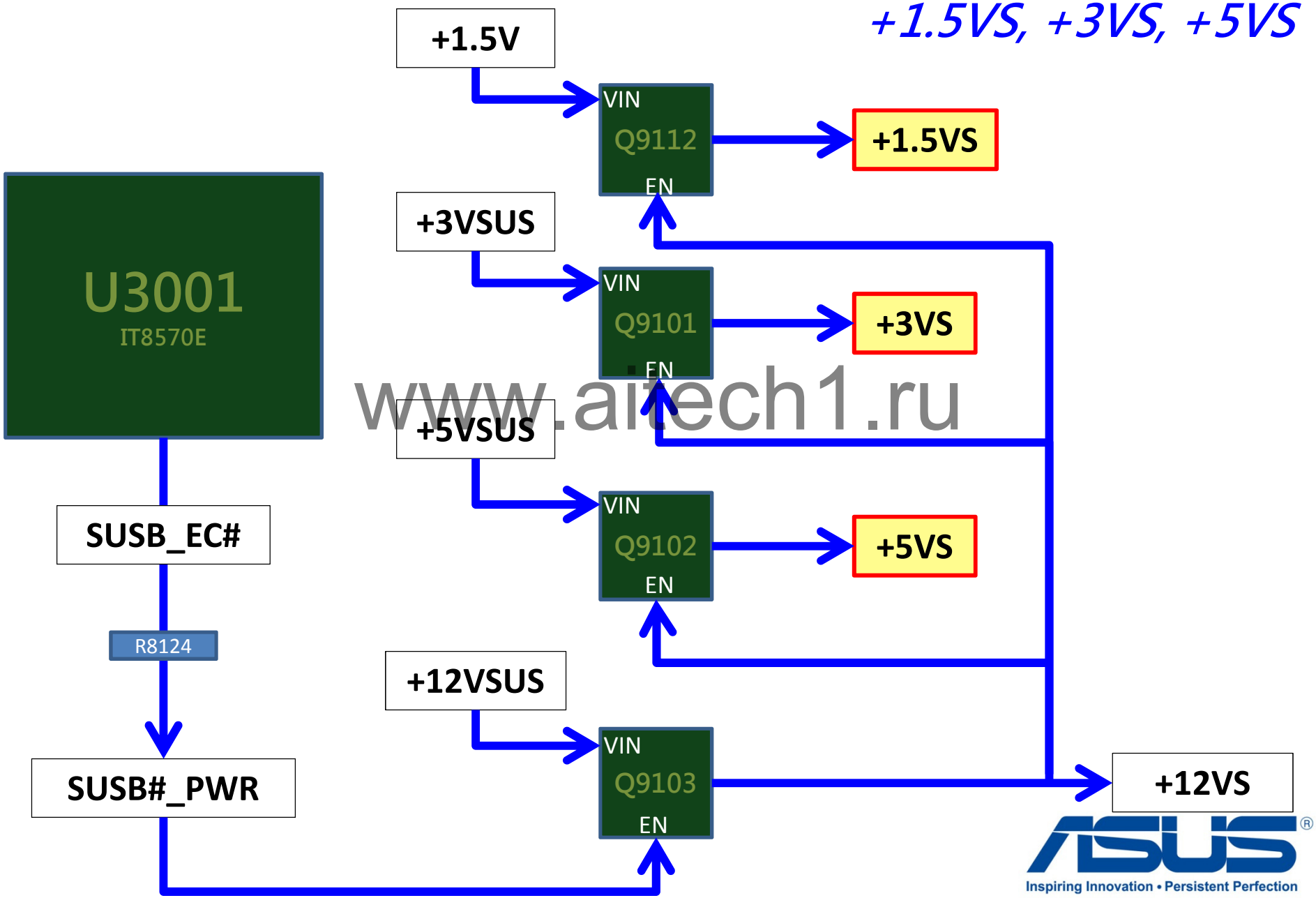
www.aitech1.ru

Q8401: A transistor to be the inverter.

ASUS Inspiring Innovation • Persistent Perfection

➢ Power on sequence analysis

+1.5VS, +3VS, +5VS



www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

Intel Calpella Platform – K52JT

- Calpella Platform Block Diagram
- Ibex Peak-M Overview
- K52JT Architecture
- [Repair reference] - No power
- [Repair reference] - No display with power is on
- [Repair reference] - Vcore Problems
- [Repair reference] - Battery Charging problems
- [Repair reference] - LAN problems
- [Repair reference] - Audio problems
- Q & A

www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

No display with power is on

- View angle : Architecture
- Connection problems between GPU and display devices
- Connection problems between CPU and GPU
- No display due to BIOS problems
- Connection problems between PCH and CPU
- Connection problems between CPU and RAM(s)

www.aitech1.ru

ASUS®
Inspiring Innovation • Persistent Perfection

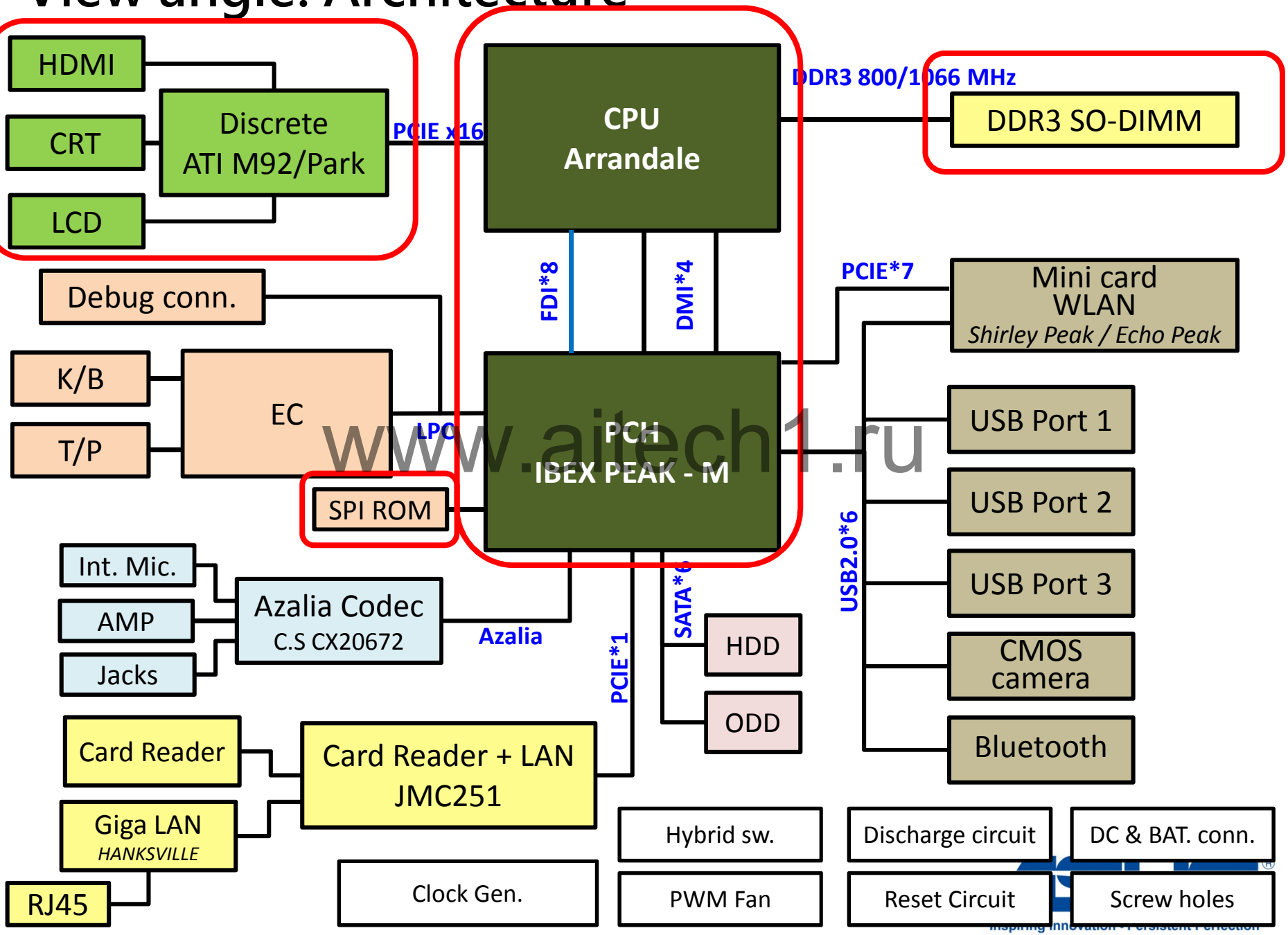
No display with power is on

- View angle : Architecture
- Connection problems between GPU and display devices
- Connection problems between CPU and GPU
- No display due to BIOS problems
- Connection problems between PCH and CPU
- Connection problems between CPU and RAM(s)

www.aitech1.ru

ASUS®
Inspiring Innovation • Persistent Perfection

➢ View angle: Architecture



www.ailech1.ru

No display with power is on

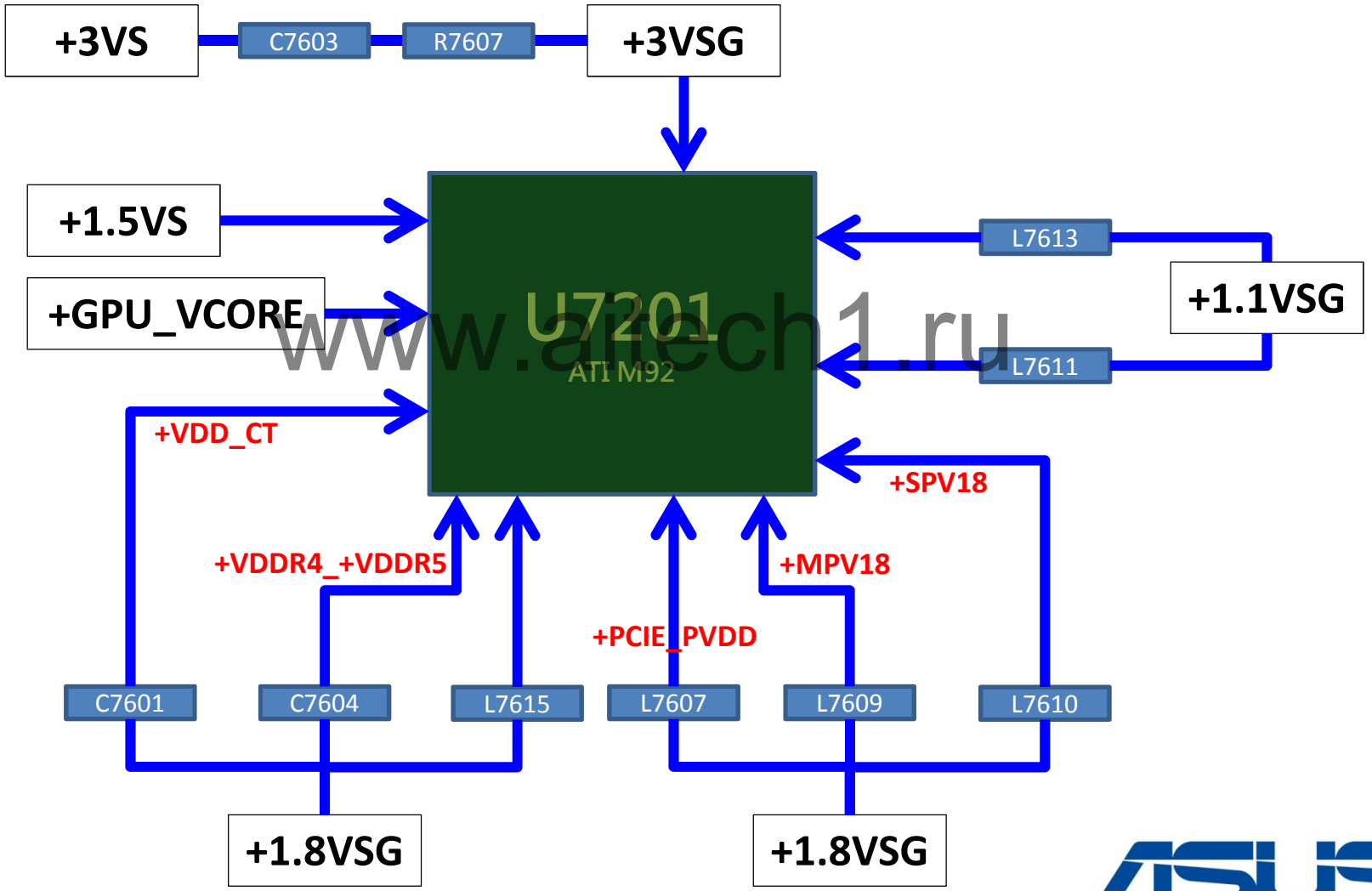
- View angle : Architecture
- **Connection problems between GPU and display devices**
- Connection problems between CPU and GPU
- No display due to BIOS problems
- Connection problems between PCH and CPU
- Connection problems between CPU and RAM(s)

www.aitech1.ru

ASUS®
Inspiring Innovation • Persistent Perfection

➢ Connection problems between GPU and display devices

Critical Power sources to ATI M92 GPU chipset(1)

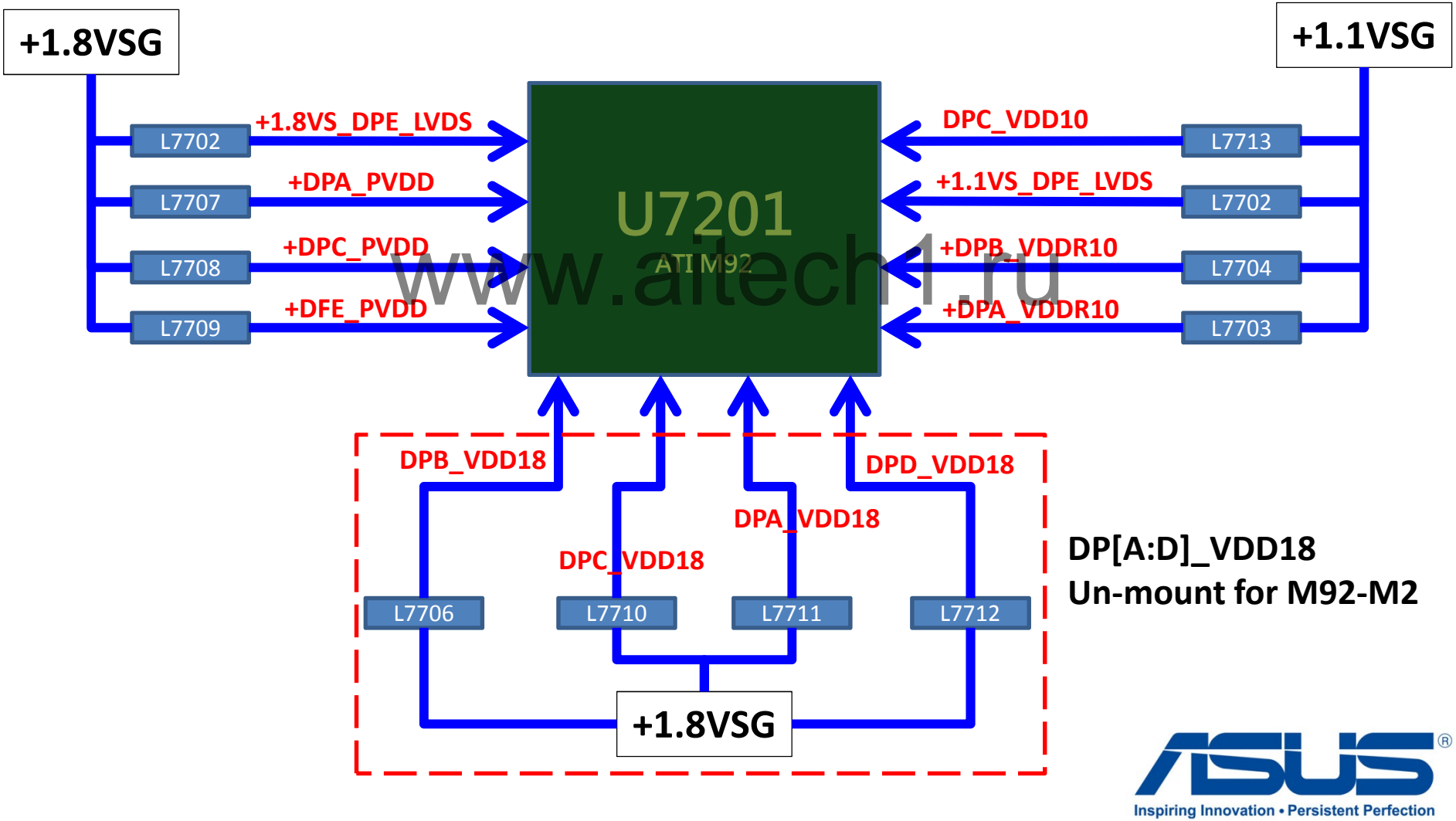


www.antech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

➢ Connection problems between GPU and display devices

Critical Power sources to ATI M92 GPU chipset(2)



www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

➢ Connection problems between GPU and display devices

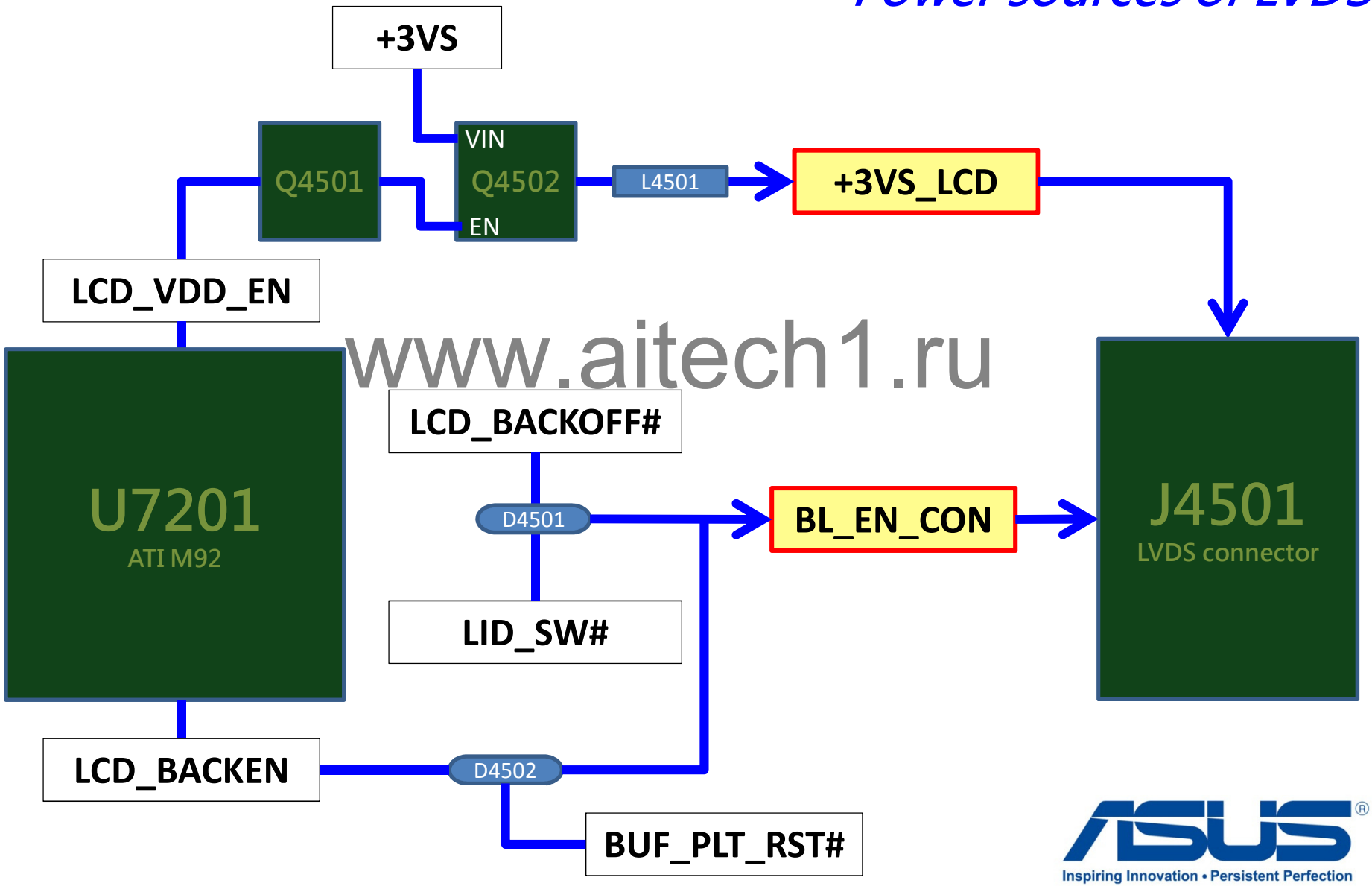
Critical Clocks to ATI M92 GPU chipset

www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

➢ Connection problems between GPU and display devices

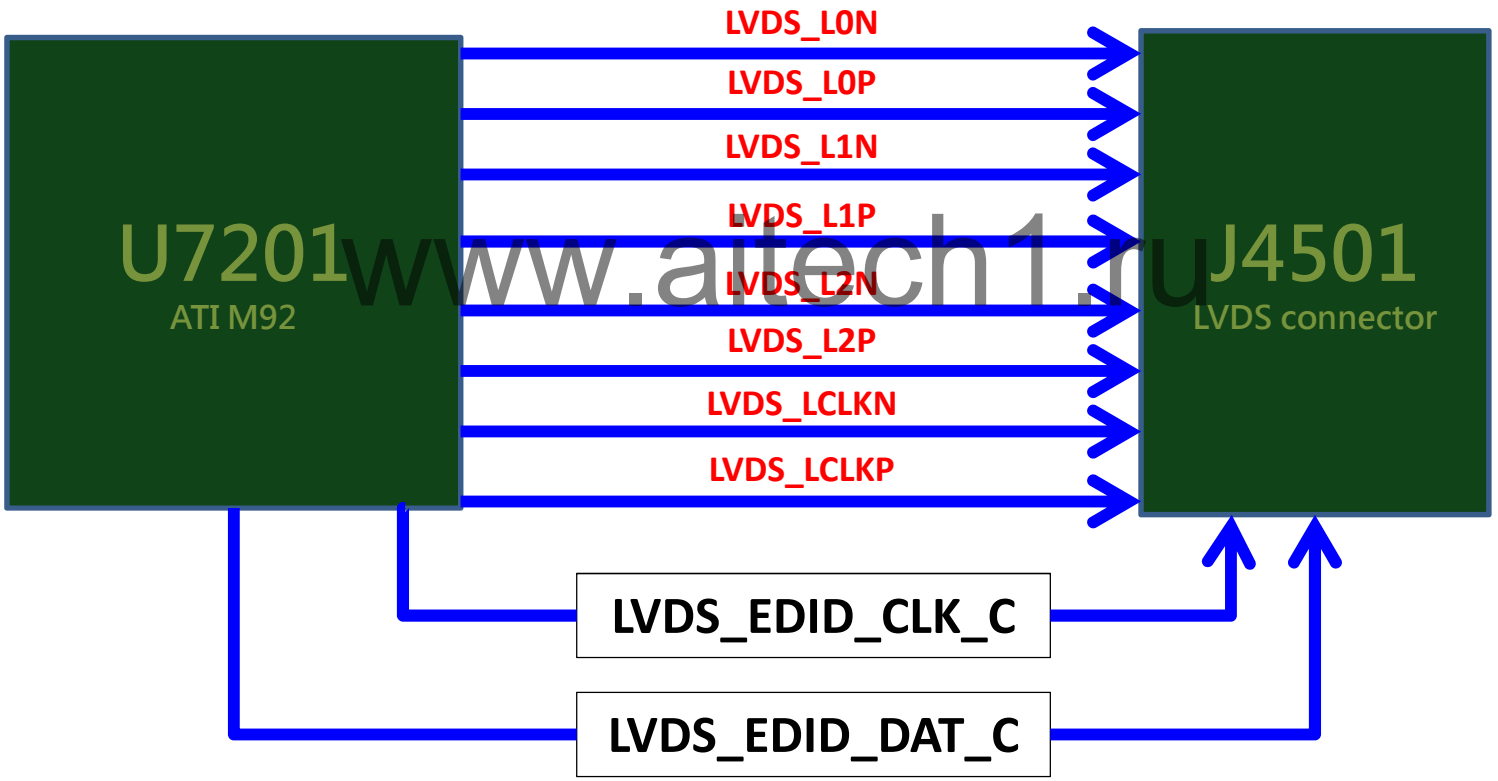
Power sources of LVDS



ASUS
Inspiring Innovation • Persistent Perfection

➢ Connection problems between GPU and display devices

Signals from GPU to LVDS

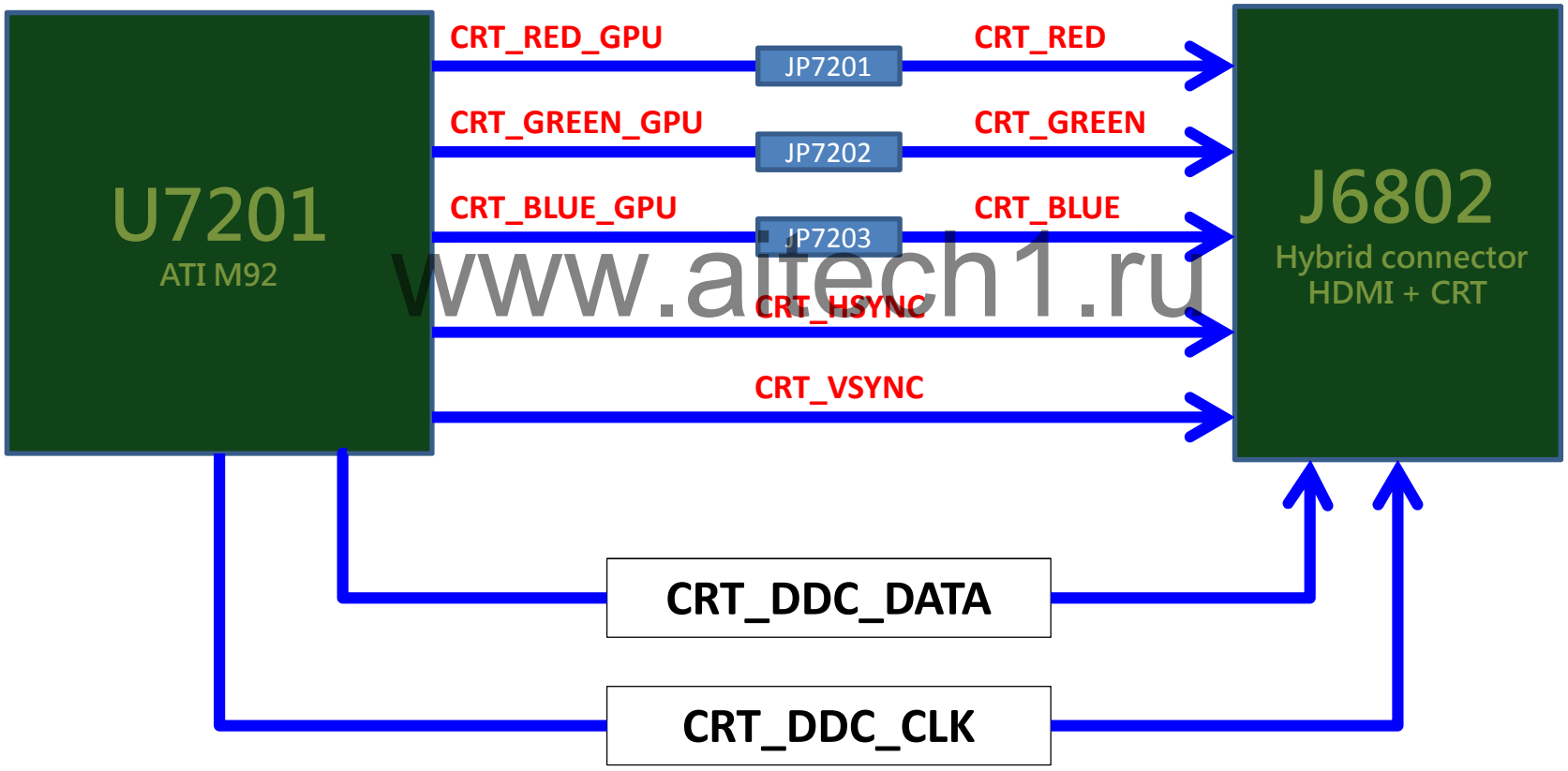


www.altech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

➢ Connection problems between GPU and display devices

Signals from GPU to CRT out

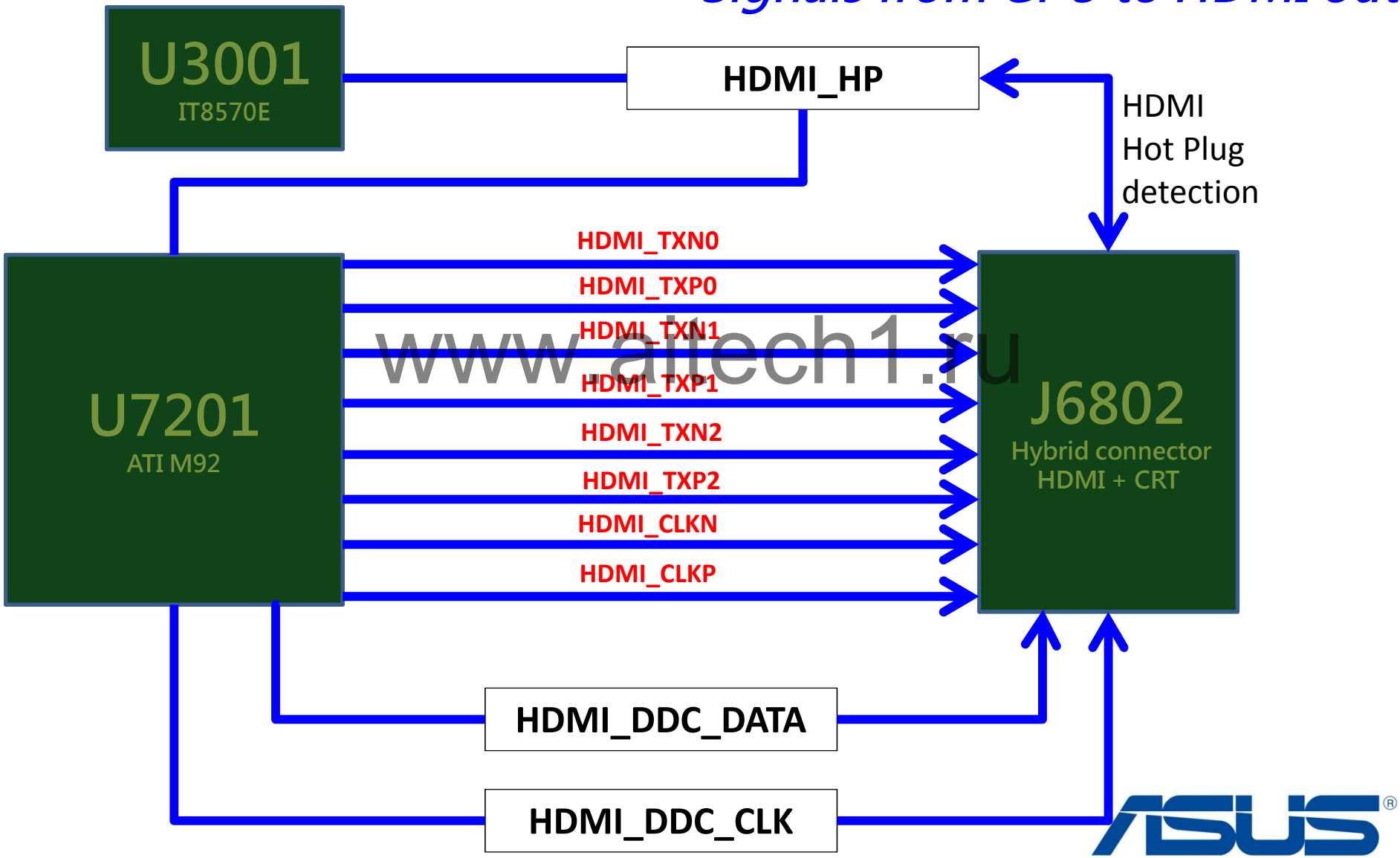


www.altech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

➢ Connection problems between GPU and display devices

Signals from GPU to HDMI out



www.altech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

No display with power is on

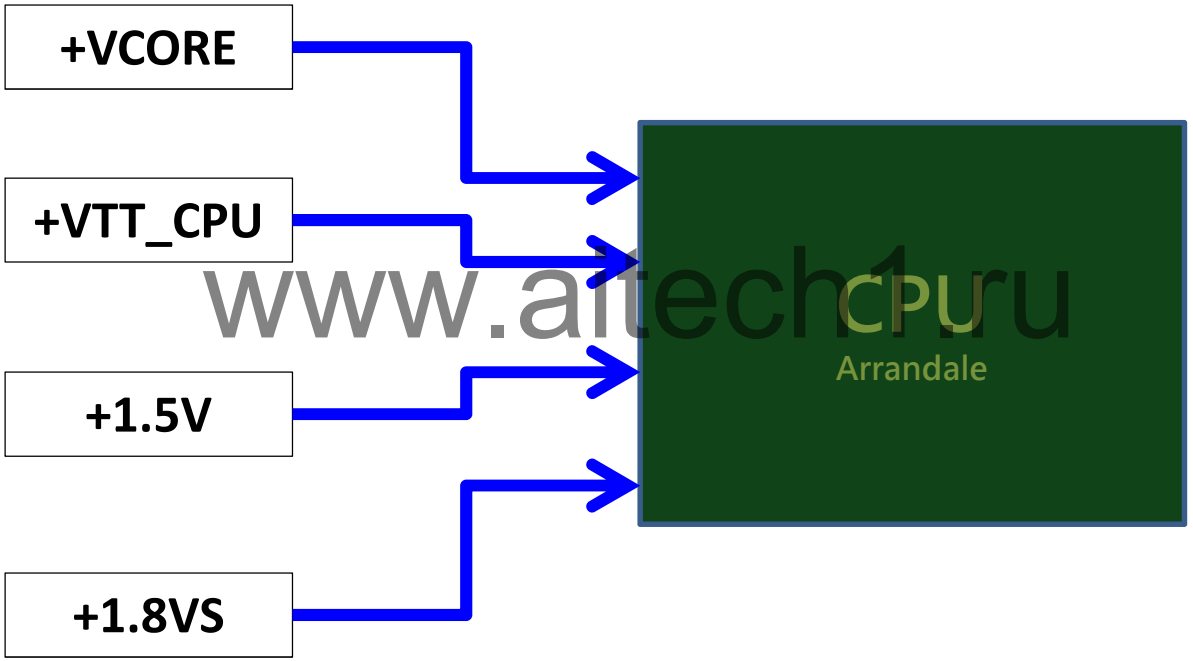
- View angle : Architecture
- Connection problems between GPU and display devices
- **Connection problems between CPU and GPU**
- No display due to BIOS problems
- Connection problems between PCH and CPU
- Connection problems between CPU and RAM(s)

www.aitech1.ru

ASUS®
Inspiring Innovation • Persistent Perfection

➢ Connection problems between CPU and GPU

Critical Power sources to CPU

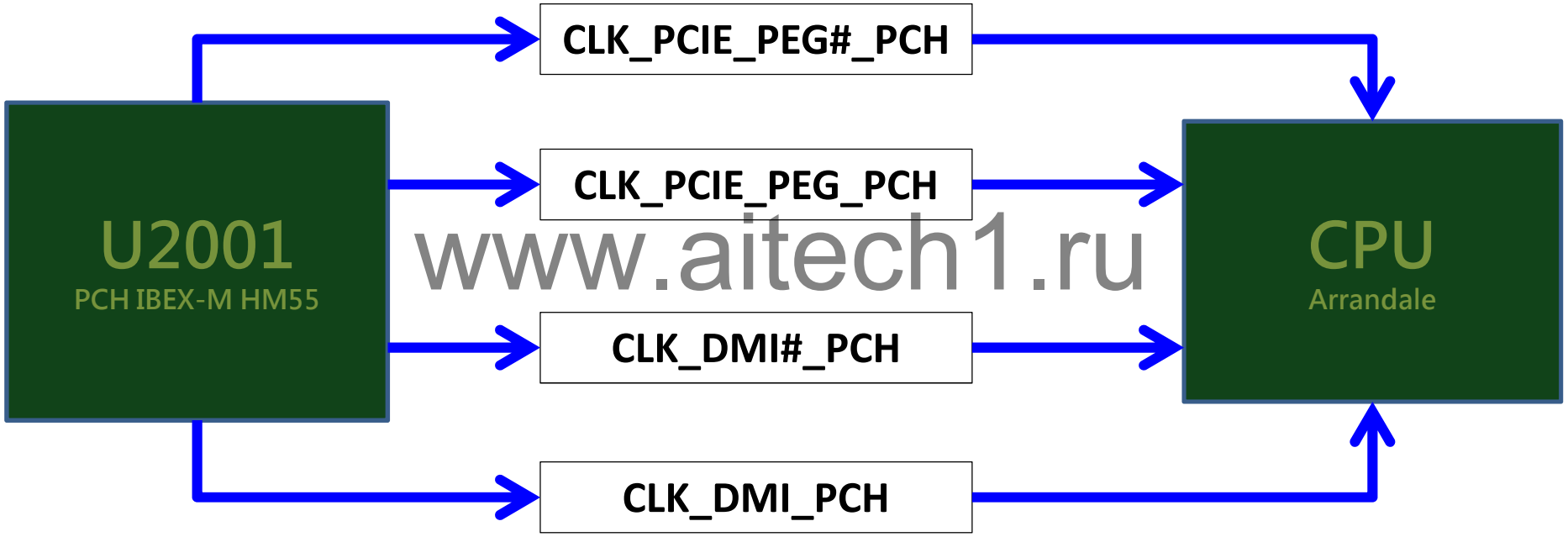


www.altech1.ru

Inspiring Innovation • Persistent Perfection

➢ Connection problems between CPU and GPU

Critical Clocks from PCH to CPU

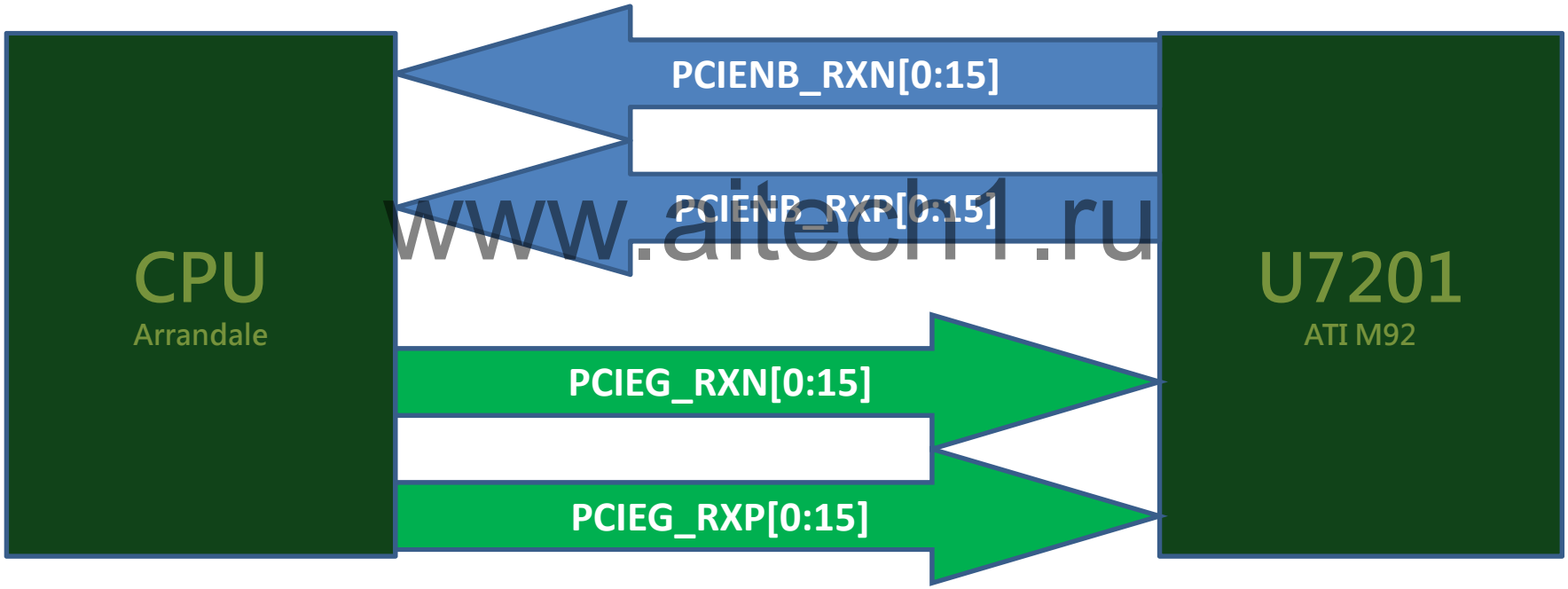


www.aitech1.ru

ASUS®
Inspiring Innovation • Persistent Perfection

➢ Connection problems between CPU and GPU

Data Transmission pins between CPU & GPU



www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

No display with power is on

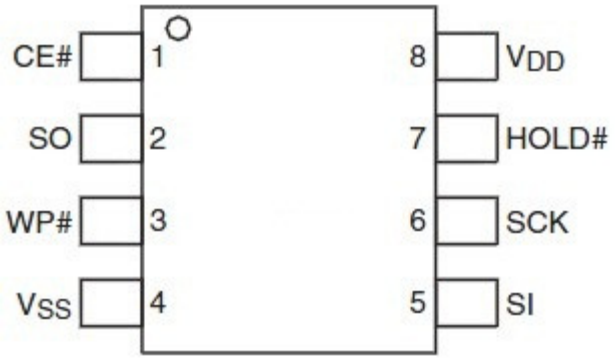
- View angle : Architecture
- Connection problems between GPU and display devices
- Connection problems between CPU and GPU
- **No display due to BIOS problems**
- Connection problems between PCH and CPU
- Connection problems between CPU and RAM(s)

www.aitech1.ru

ASUS®
Inspiring Innovation • Persistent Perfection

➢ No display due to BIOS problems

SST 25VF032B Pin Descriptions

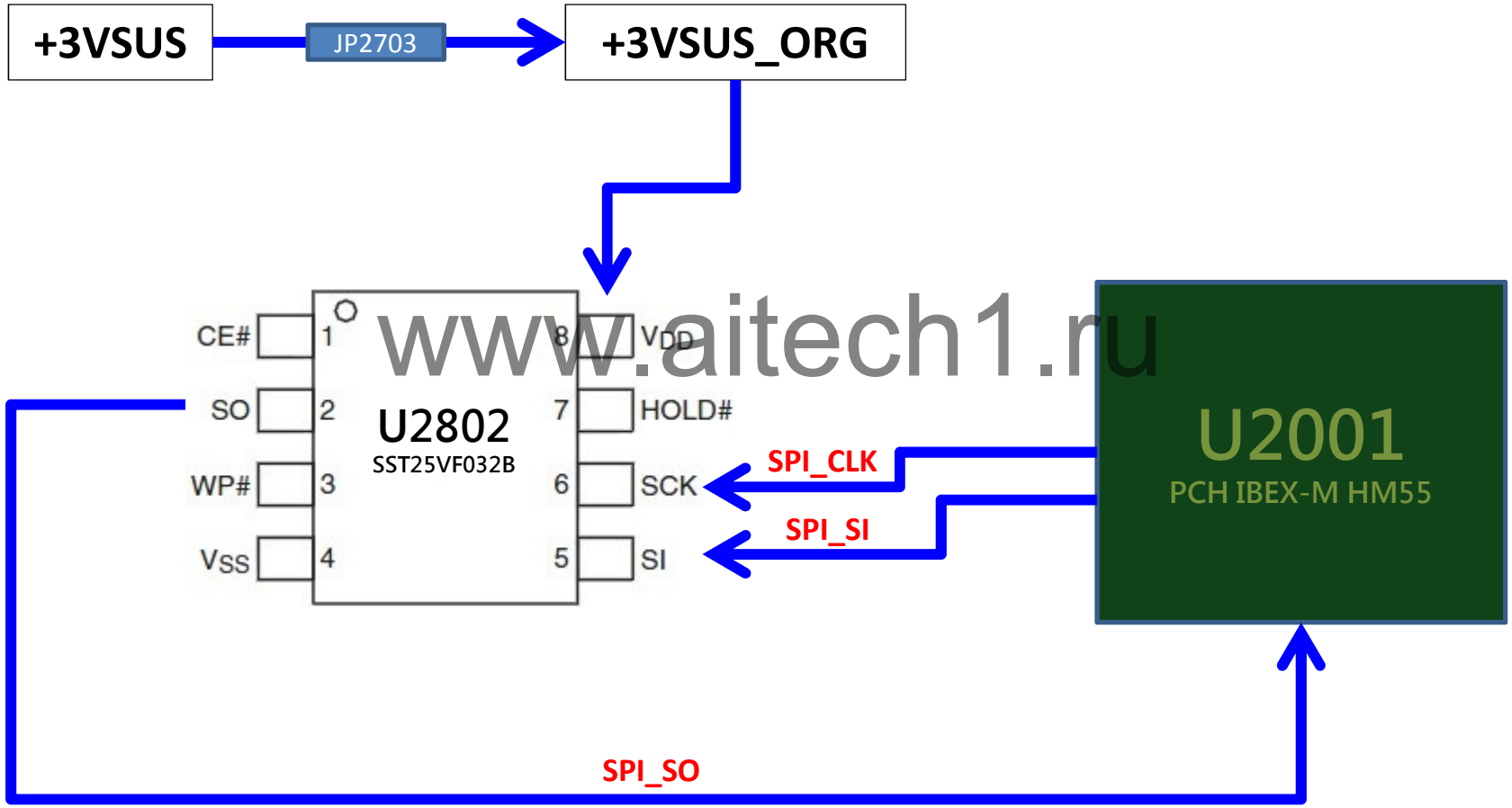


Symbol	Pin Name	Functions
SCK	Serial Clock	To provide the timing of the serial interface. Commands, addresses, or input data are latched on the rising edge of the clock input, while output data is shifted out on the falling edge of the clock input.
SI	Serial Data Input	To transfer commands, addresses, or data serially into the device. Inputs are latched on the rising edge of the serial clock.
SO	Serial Data Output	To transfer data serially out of the device. Data is shifted out on the falling edge of the serial clock.
CE#	Chip Enable	The device is enabled by a high to low transition on CE#. CE# must remain low for the duration of any command sequence.
WP#	Write Protect	The Write Protect (WP#) pin is used to enable/disable BPL bit in the status register.
HOLD#	Hold	To temporarily stop serial communication with SPI flash memory without resetting the device.
V_{DD}	Power Supply	To provide power supply voltage: 2.7-3.6V
V_{SS}	Ground	

www.aitech1.ru

➢ No display due to BIOS problems

How BIOS works in K52JT



www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

No display with power is on

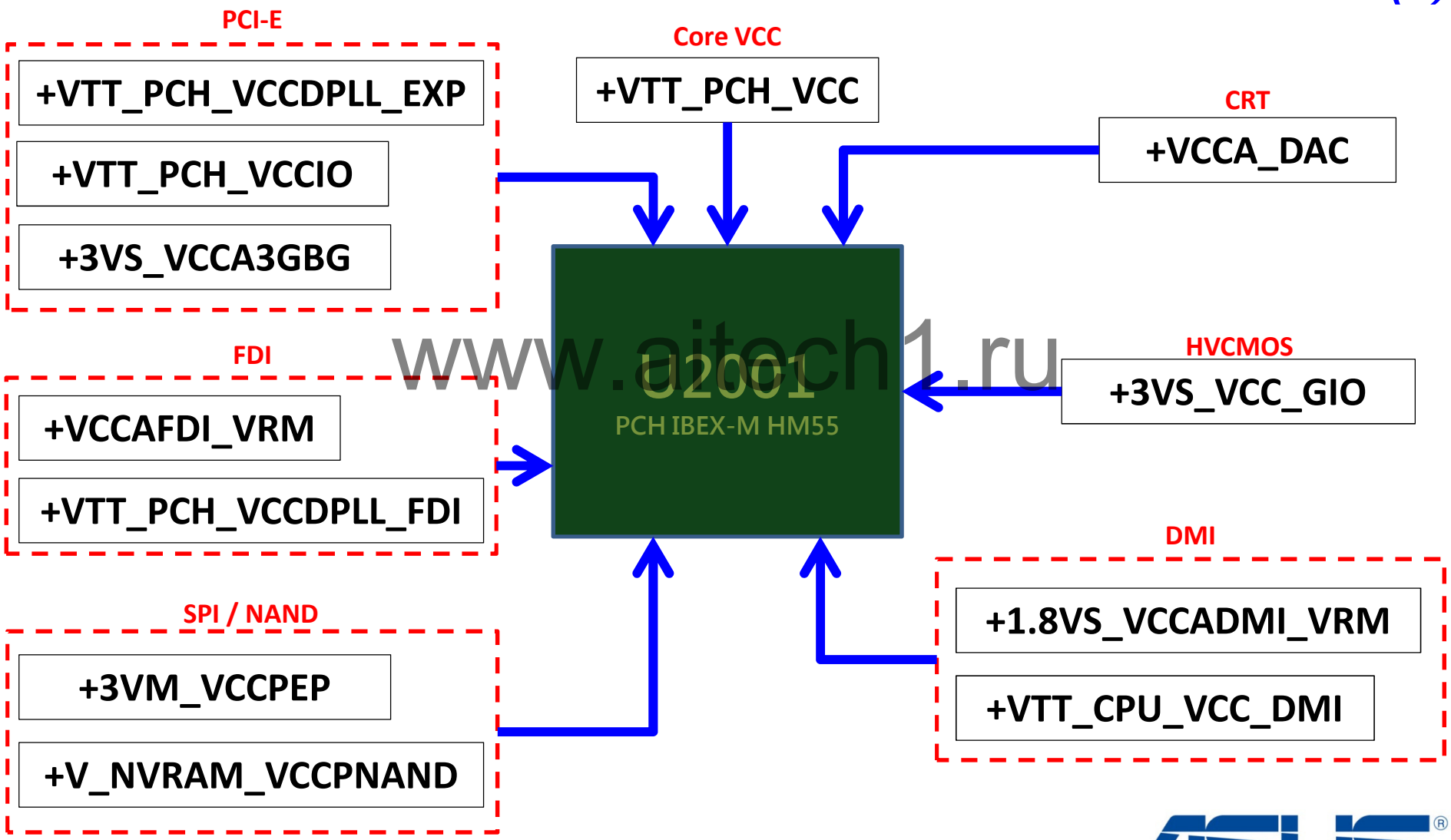
- View angle : Architecture
- Connection problems between GPU and display devices
- Connection problems between CPU and GPU
- No display due to BIOS problems
- **Connection problems between PCH and CPU**
- Connection problems between CPU and RAM(s)

www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

➢ Connection problems between PCH and CPU

Critical Power sources to PCH (1)

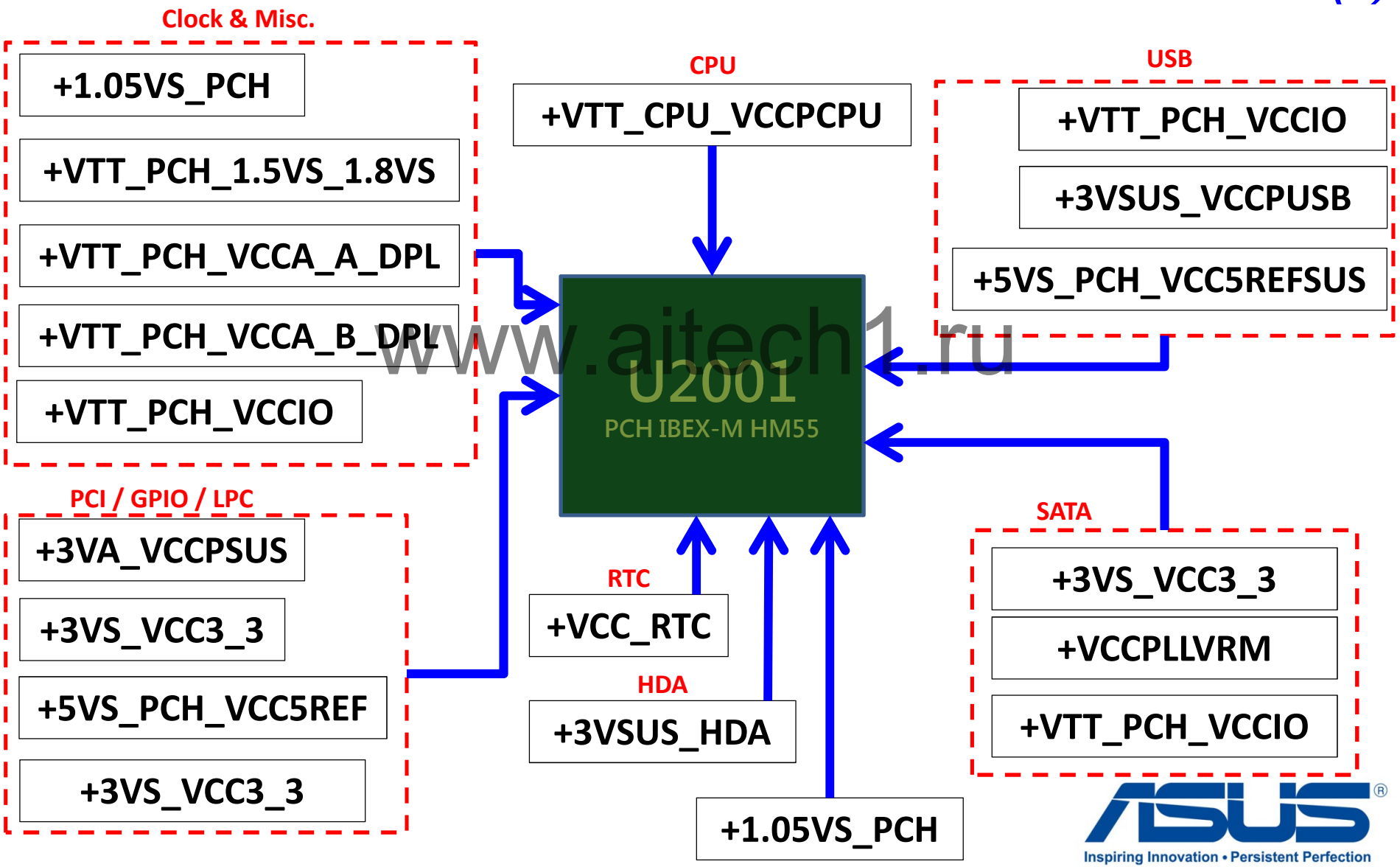


www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

➢ Connection problems between PCH and CPU

Critical Power sources to PCH (2)

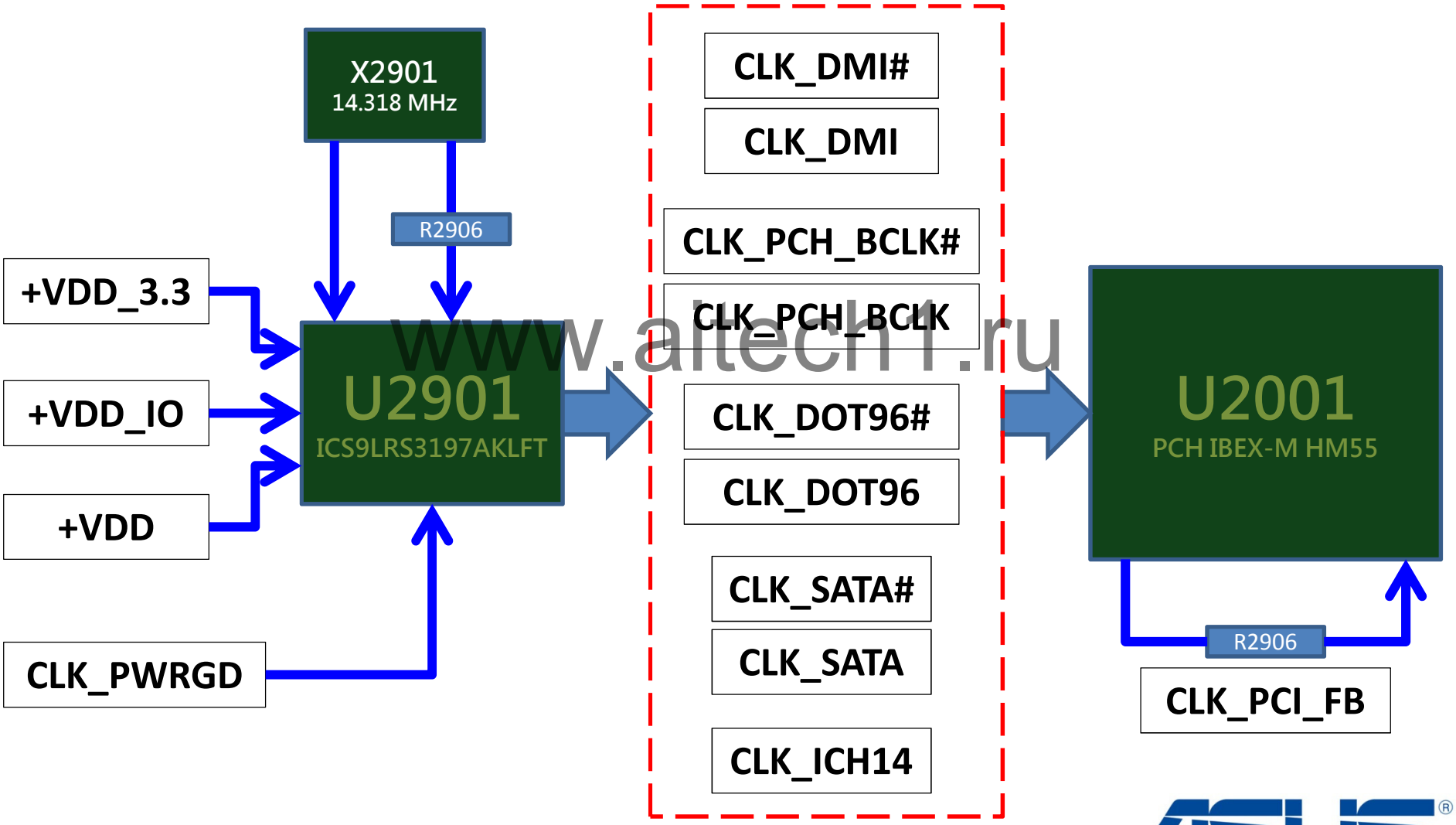


www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

➢ Connection problems between PCH and CPU

Critical Clocks from clock generator to PCH

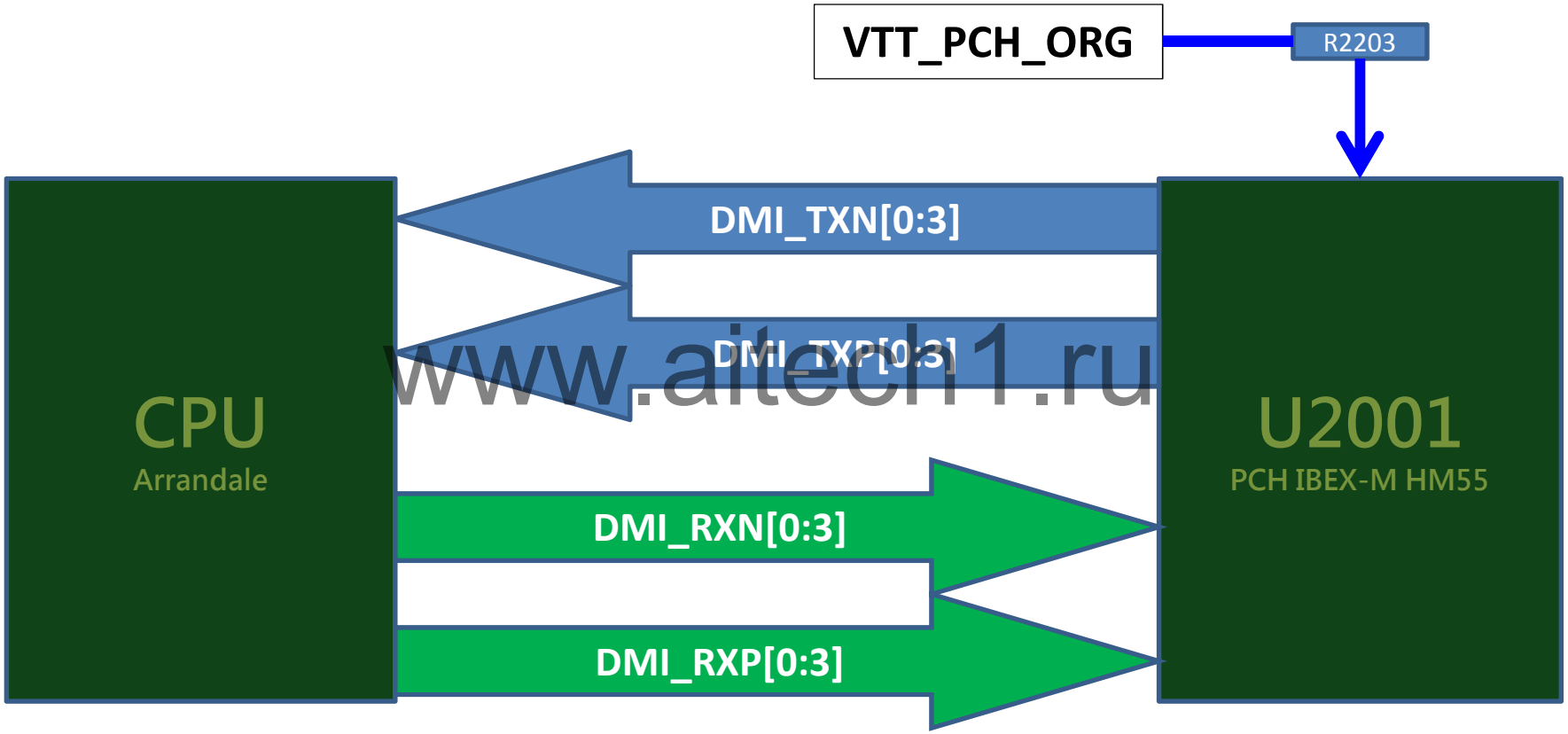


www.altech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

➢ Connection problems between PCH and CPU

Data Transmission pins between PCH & CPU

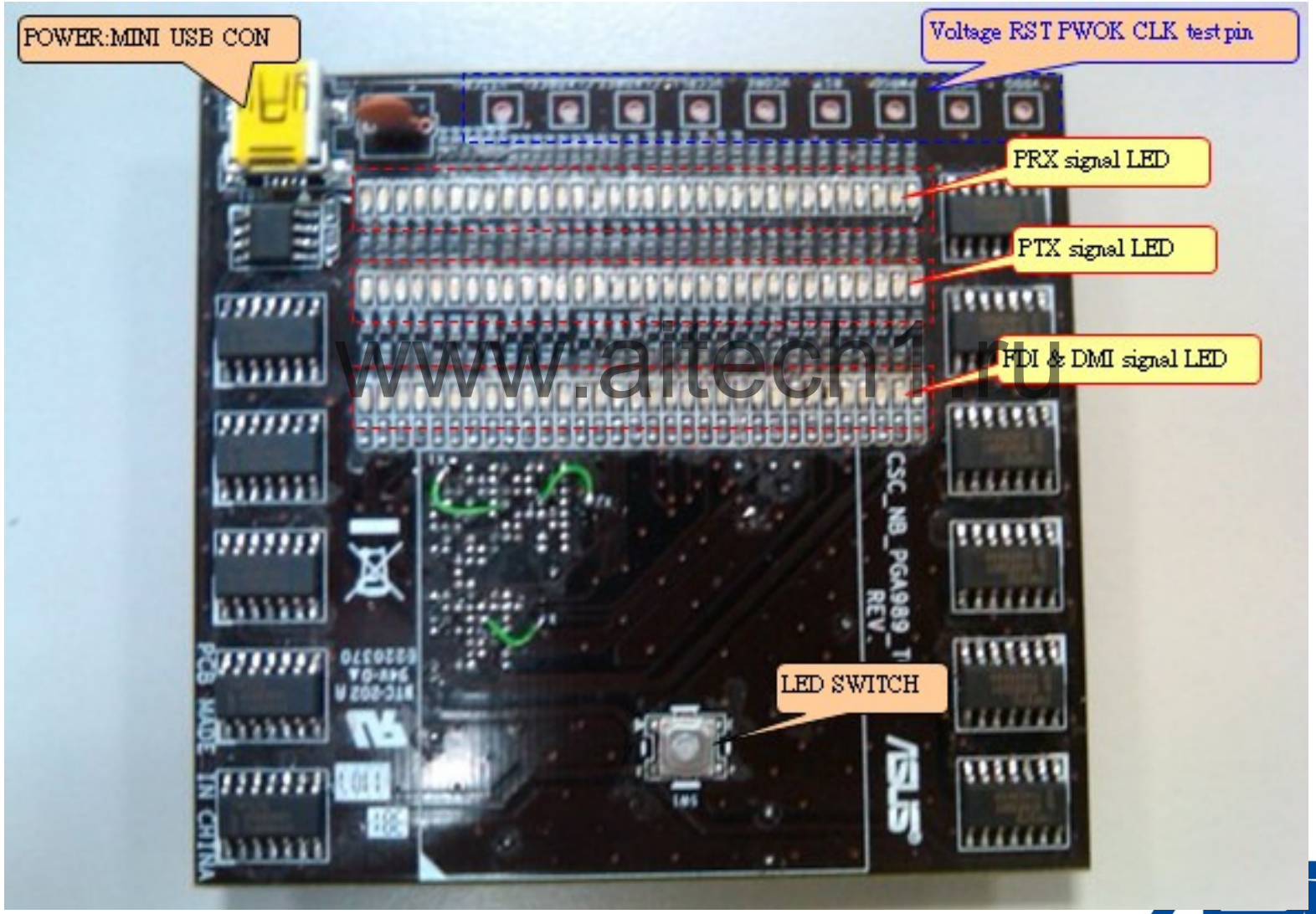


www.aitech1.ru

ASUS®
Inspiring Innovation • Persistent Perfection

➢ Connection problems between CPU and RAM(s)

PGA989 CPU inspection Tool



Inspiring Innovation • Persistent Perfection

No display with power is on

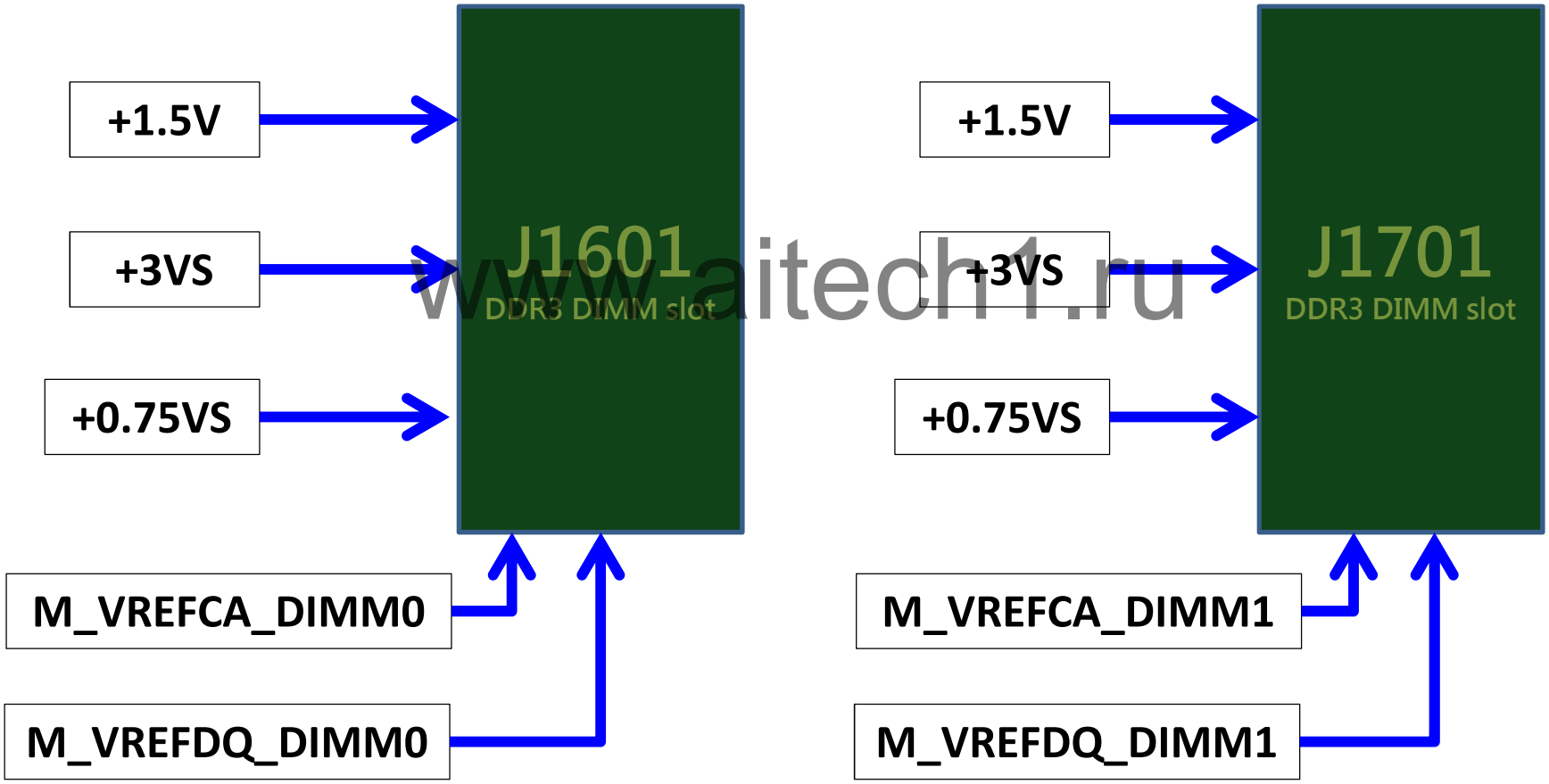
- View angle : Architecture
- Connection problems between GPU and display devices
- Connection problems between CPU and GPU
- No display due to BIOS problems
- Connection problems between PCH and CPU
- **Connection problems between CPU and RAM(s)**

www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

➢ Connection problems between CPU and RAM(s)

Critical Power sources to DDR3

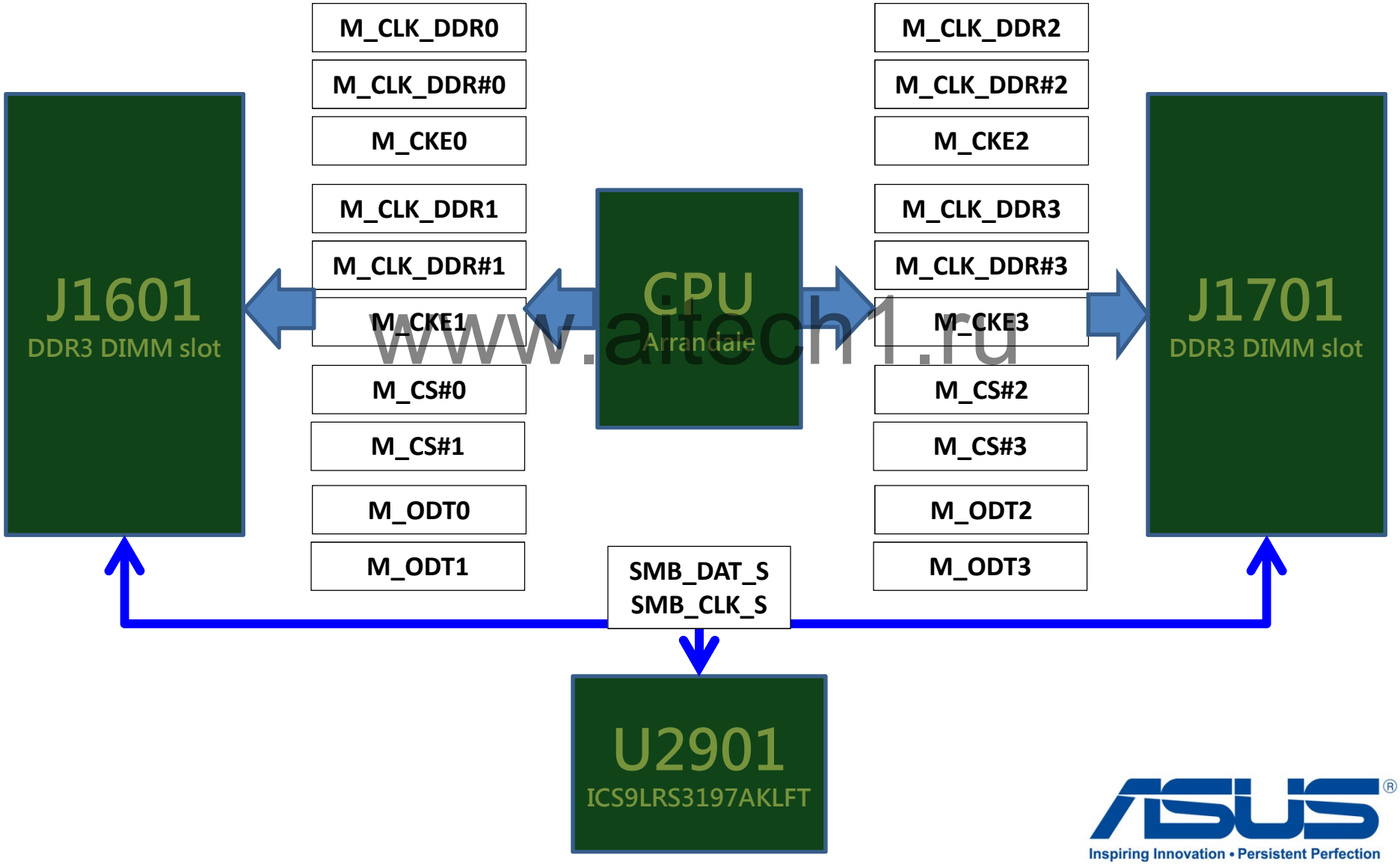


www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

➢ Connection problems between CPU and RAM(s)

Critical Clocks and Control signals to DDR3 (1)

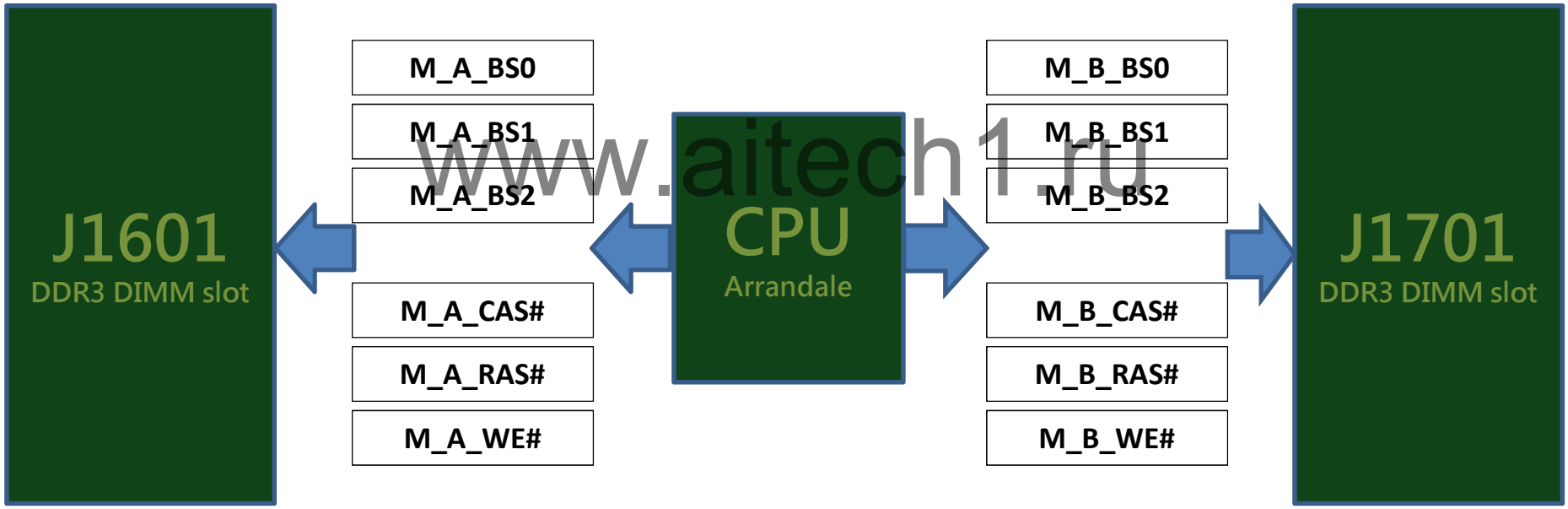


www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

➢ Connection problems between CPU and RAM(s)

Critical Clocks and Control signals to DDR3 (2)

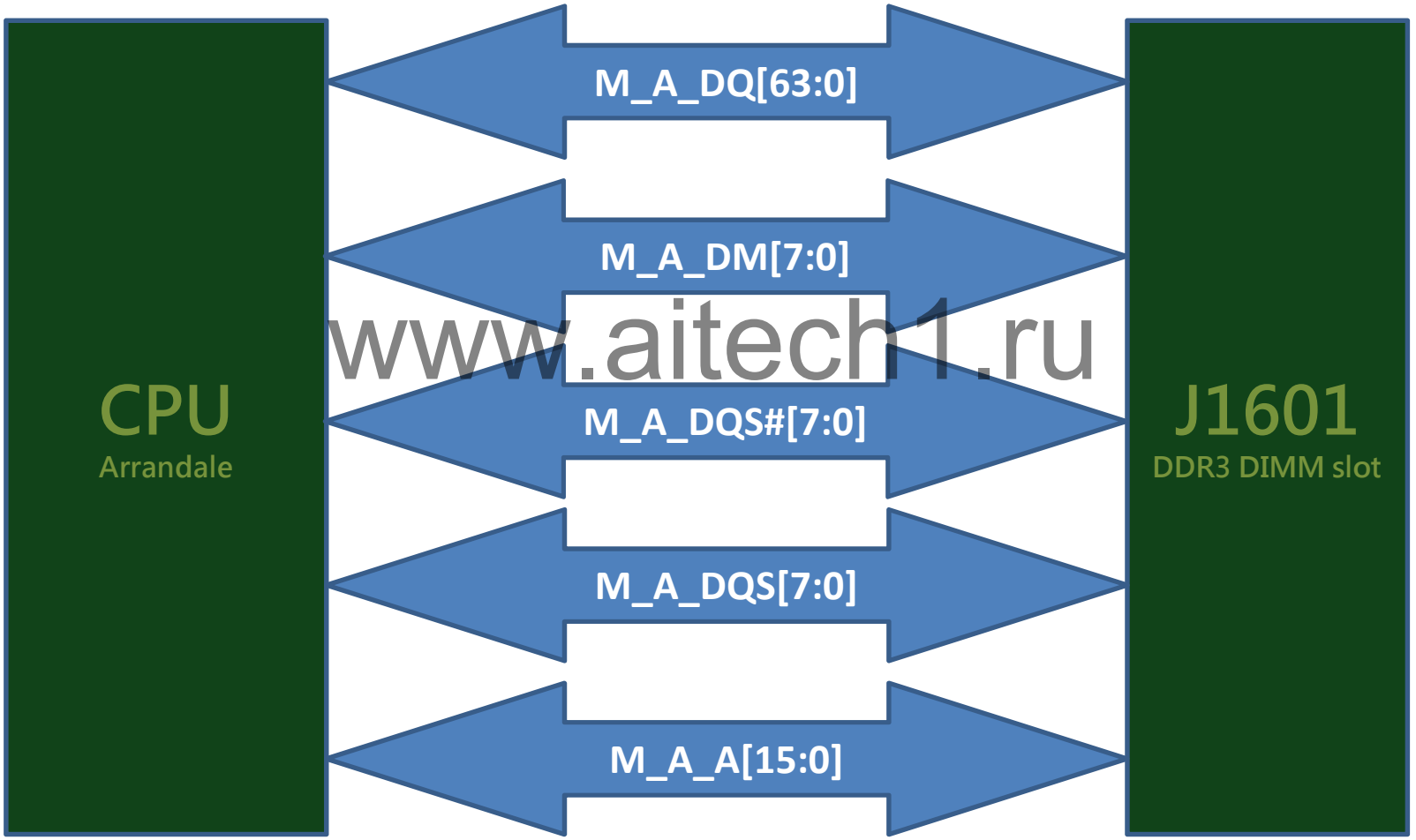


www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

➢ Connection problems between CPU and RAM(s)

Data Transmission pins between CPU and DIMM0

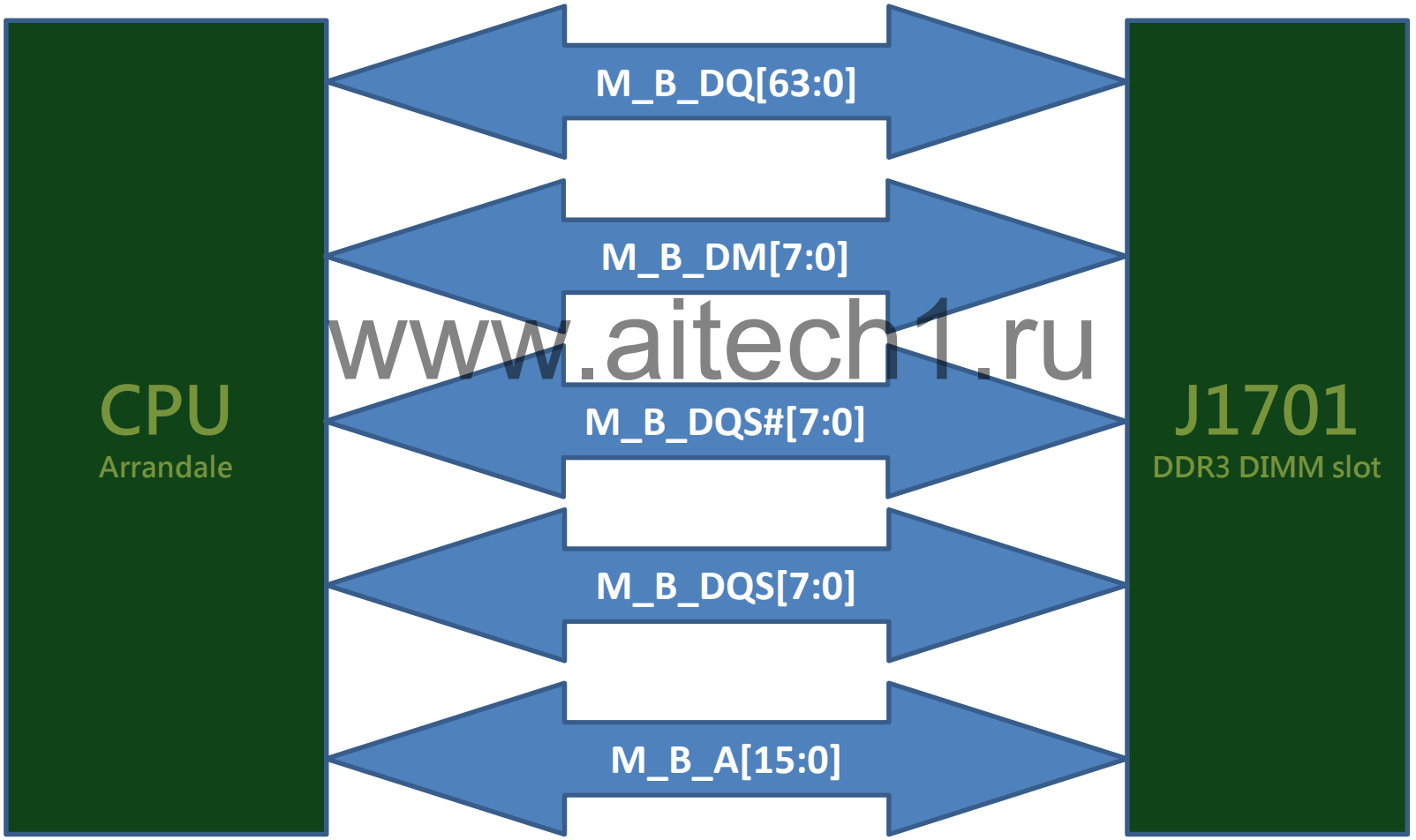


www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

➢ Connection problems between CPU and RAM(s)

Data Transmission pins between CPU and DIMM1



www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

- Connection problems between CPU and RAM(s)

DDR3 inspection Tool

Inspiring Innovation • Persistent Perfection

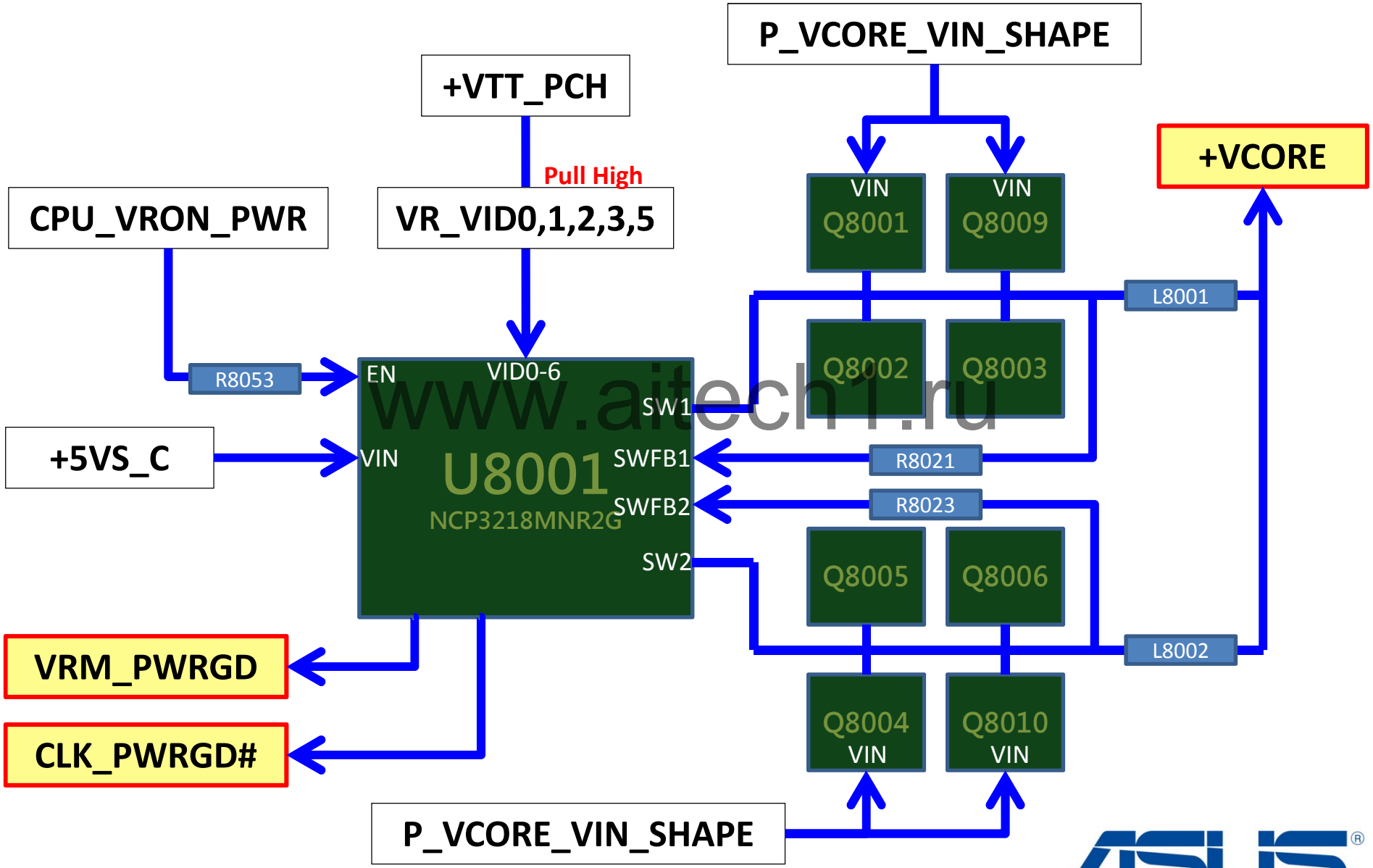
Intel Calpella Platform – K52JT

- Calpella Platform Block Diagram
- Ibex Peak-M Overview
- K52JT Architecture
- [Repair reference] - No power
- [Repair reference] - No display with power is on
- **[Repair reference] - Vcore Problems**
- [Repair reference] - Battery Charging problems
- [Repair reference] - LAN problems
- [Repair reference] - Audio problems
- Q & A

www.aitech1.ru

ASUS®
Inspiring Innovation • Persistent Perfection

➢ VCORE Problems



www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

Intel Calpella Platform – K52JT

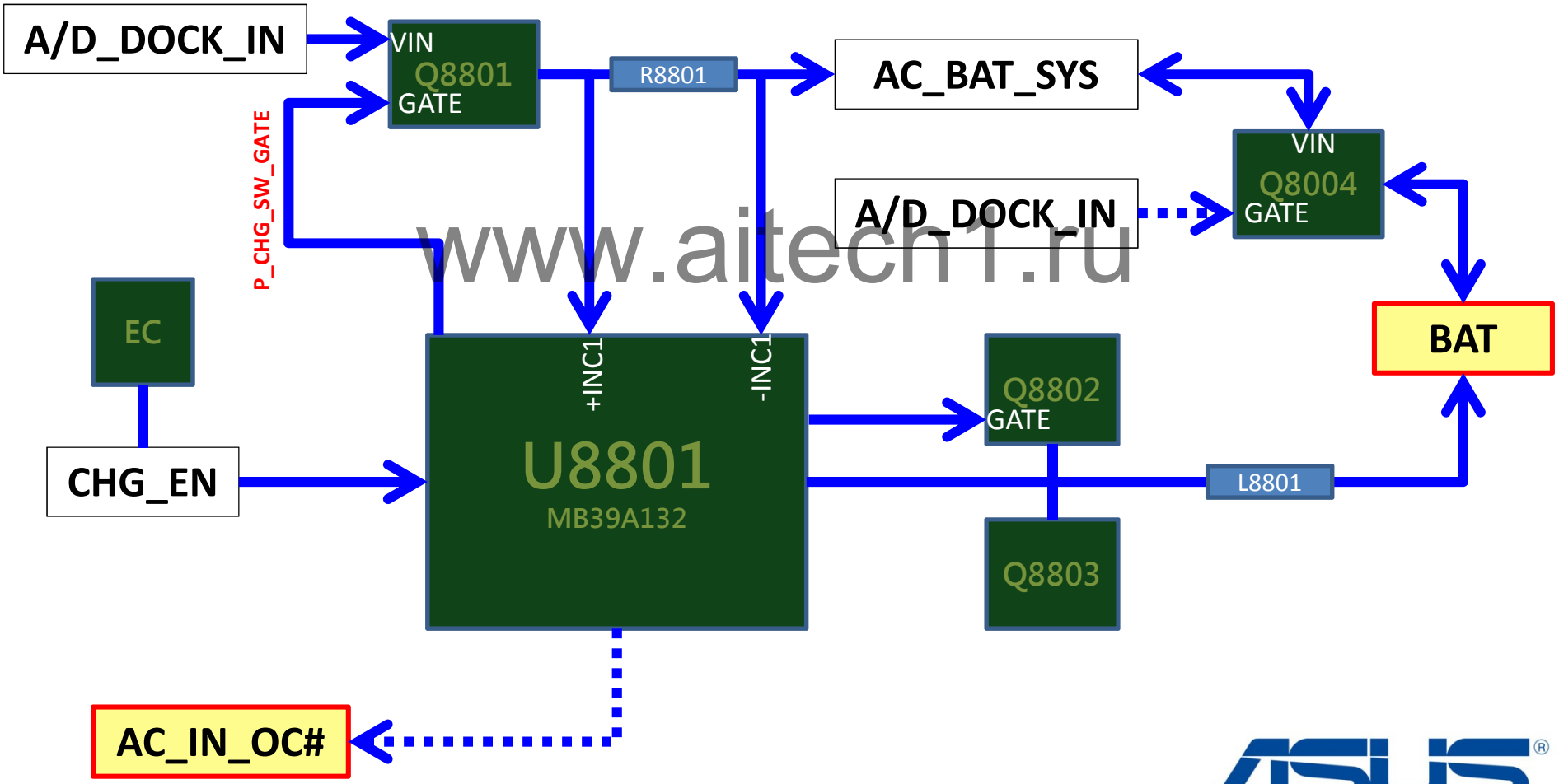
- Calpella Platform Block Diagram
- Ibex Peak-M Overview
- K52JT Architecture
- [Repair reference] - No power
- [Repair reference] - No display with power is on
- [Repair reference] - Vcore Problems
- **[Repair reference] - Battery Charging problems**
- [Repair reference] - LAN problems
- [Repair reference] - Audio problems
- Q & A

www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

➢ Battery Charging Problems

Battery cannot be charged due to Power (BAT) problems

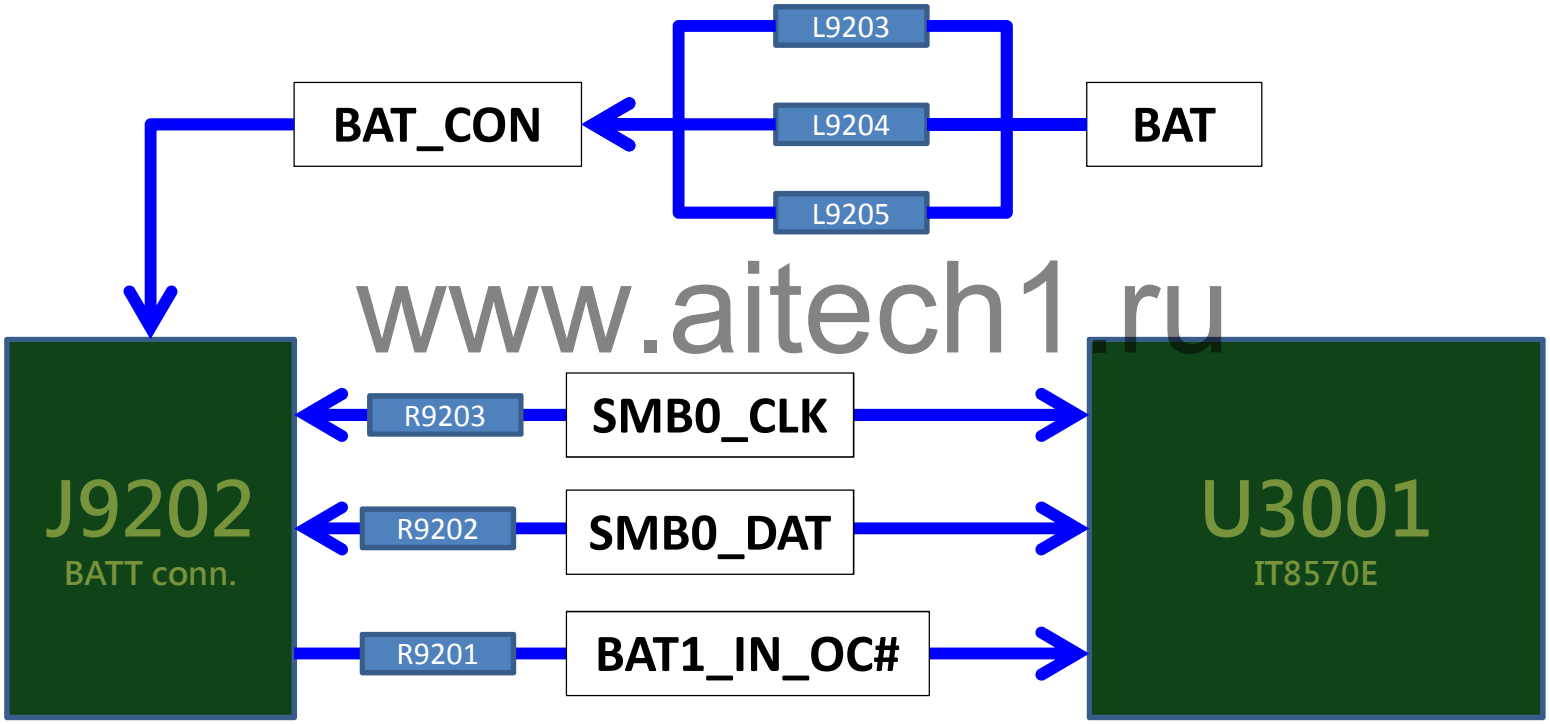


www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

➢ Battery Charging Problems

Battery cannot be charged due to Signal detection problems



ASUS
Inspiring Innovation • Persistent Perfection

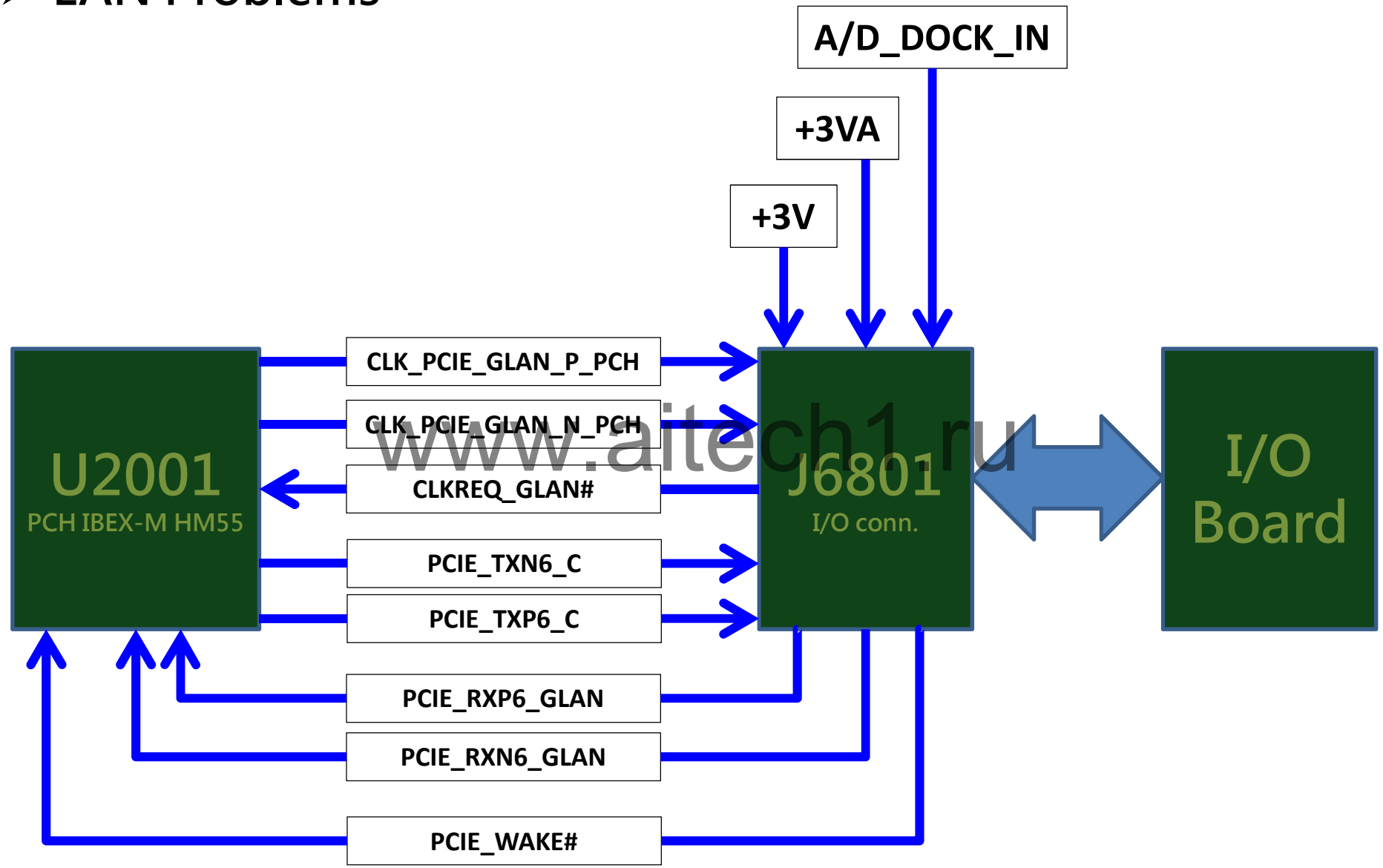
Intel Calpella Platform – K52JT

- Calpella Platform Block Diagram
- Ibex Peak-M Overview
- K52JT Architecture
- [Repair reference] - No power
- [Repair reference] - No display with power is on
- [Repair reference] - Vcore Problems
- [Repair reference] - Battery Charging problems
- **[Repair reference] - LAN problems**
- [Repair reference] - Audio problems
- Q & A

www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

➢ LAN Problems



www.aitech1.ru

ASUS®
Inspiring Innovation • Persistent Perfection

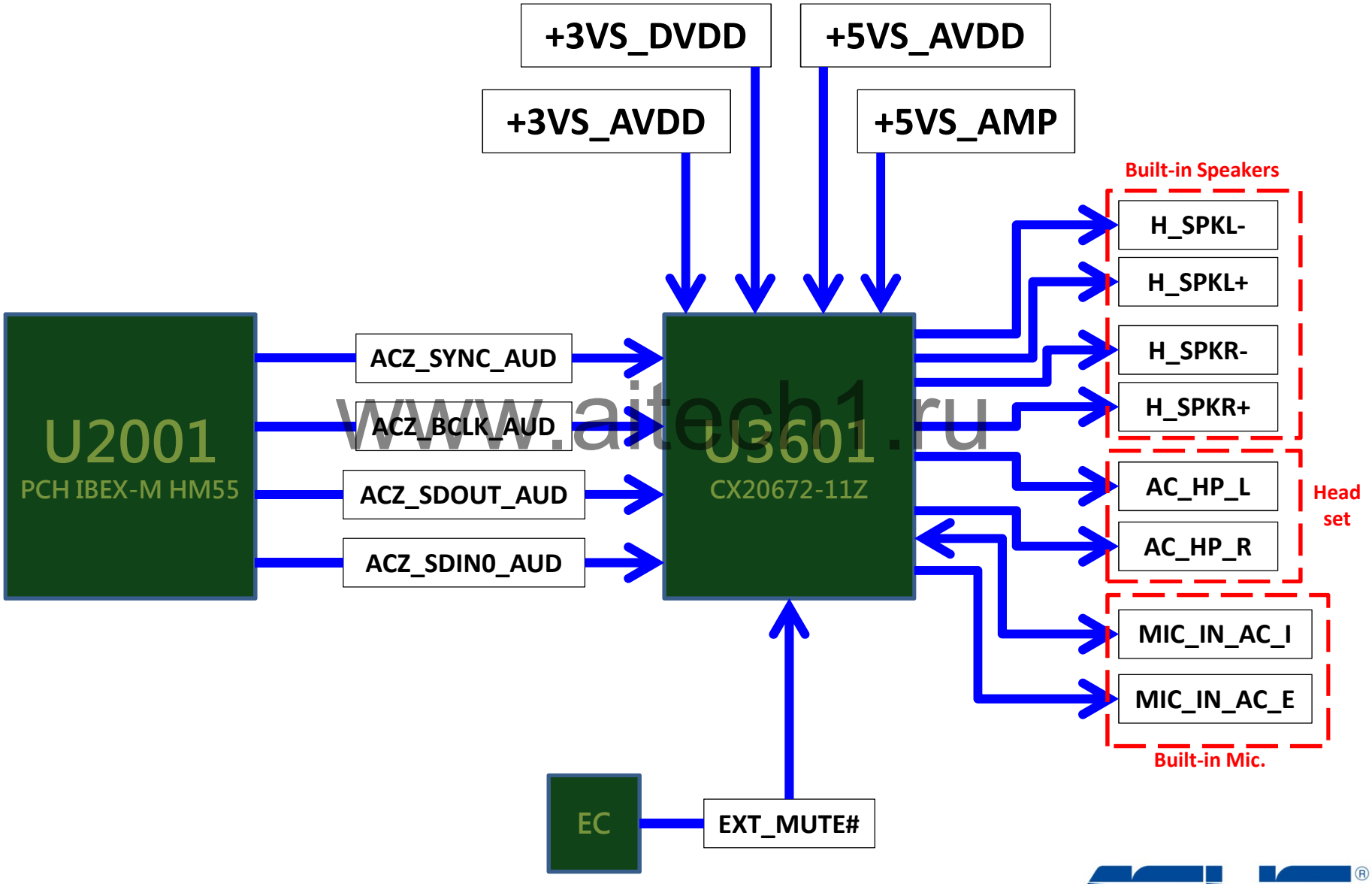
Intel Calpella Platform – K52JT

- Calpella Platform Block Diagram
- Ibex Peak-M Overview
- K52JT Architecture
- [Repair reference] - No power
- [Repair reference] - No display with power is on
- [Repair reference] - Vcore Problems
- [Repair reference] - Battery Charging problems
- [Repair reference] - LAN problems
- **[Repair reference] - Audio problems**
- Q & A

www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

➢ Audio Problems



www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

Intel Calpella Platform – K52JT

- Calpella Platform Block Diagram
- Ibex Peak-M Overview
- K52JT Architecture
- [Repair reference] - No power
- [Repair reference] - No display with power is on
- [Repair reference] - Vcore Problems
- [Repair reference] - Battery Charging problems
- [Repair reference] - LAN problems
- [Repair reference] - Audio problems
- Q & A

www.aitech1.ru

ASUS
Inspiring Innovation • Persistent Perfection

THANK YOU

www.laitech.ru

ASUS®

Inspiring Innovation • Persistent Perfection