

MB86R01

System-on-chip graphics controller



The new System-on-Chip graphics controller MB86R01 is a very versatile device with a large palette of interfaces, offering a wide scope of potential application fields.

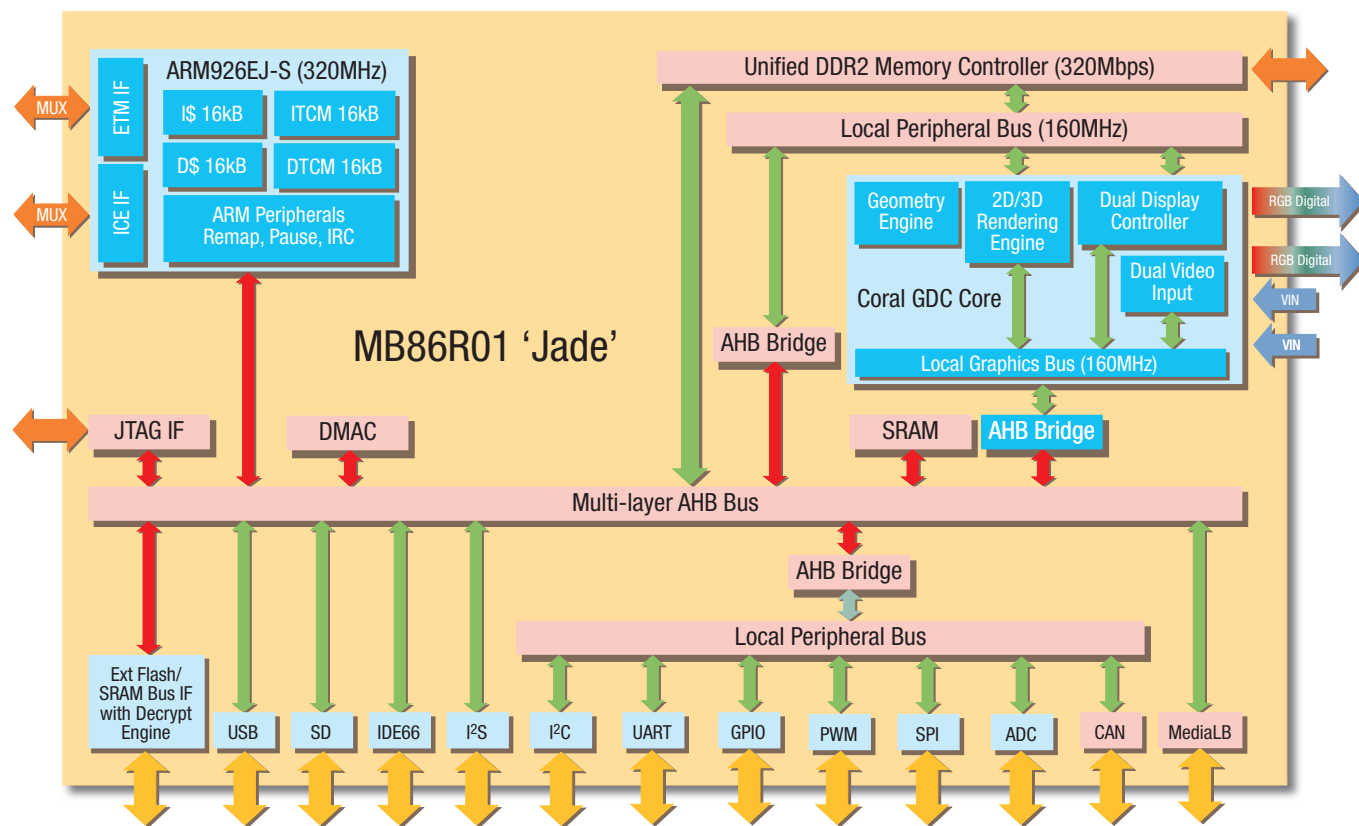
Description

MB86R01 'Jade' is a highly-integrated device for embedded automotive graphics applications. Incorporating an ARM926EJ-S CPU core, together with an enhanced version of the successful Coral PA graphics processor and a

number of external interfaces, this 90nm process technology device is highly optimised for various types of applications that require outstanding CPU performance in combination with sophisticated 2D/3D graphics features in a compact SoC.

Target applications include on-board and mobile navigation systems, graphical dashboard systems, HUD (head-up display) units, rear-seat entertainment systems, point-of-sale terminals and industrial control panels.

FACTSHEET
MB86R01 'JADE'
GRAPHICS CONTROLLER



MB86R01 block diagram.

Features

- CMOS 90nm process technology
- ARM926EJ-S CPU core with 16kB instruction and 16kB data cache
- CPU core: 16kB ITCM/16kB DTCM, ETM9 and JTAG ICE interface
- Internal/memory frequency: 320MHz
- Display resolutions typically from 320 x 240 up to 1280 x 768
- 6 layers of overlay display (windows)
- Alpha plane and constant alpha value for each layer
- Dual display output (2 separate display controllers are integrated supporting RGB8, RGB16 and RGB24)
- Dual digital video input (2 separate video capture units supporting various formats including YUV, RGB and ITU656)

- Video scaler (up/down scaling)
- Brightness, contrast, saturation control
- Rendering engine for 2D/3D graphic acceleration functions
- Geometry processor supporting floating point transformations
- Texture mapping unit (up to 4096 x 4096)
- Bit BLT unit for transfers up to 4096 x 4096 surfaces
- Alpha Bit BLT and ROP2 functions
- External DDR2-SDRAM interface (320MHz) for graphic memory (up to 128MBytes)
- Parallel flash/SRAM host interface
- Parallel ATA interface
- SD card interface
- CAN interface
- MediaLB interface
- USB 2.0 (host and function) interface

- I2C interface
- I2S interface
- UART interface
- BGA-484 Package
- Temperature range -40 to +85°C

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