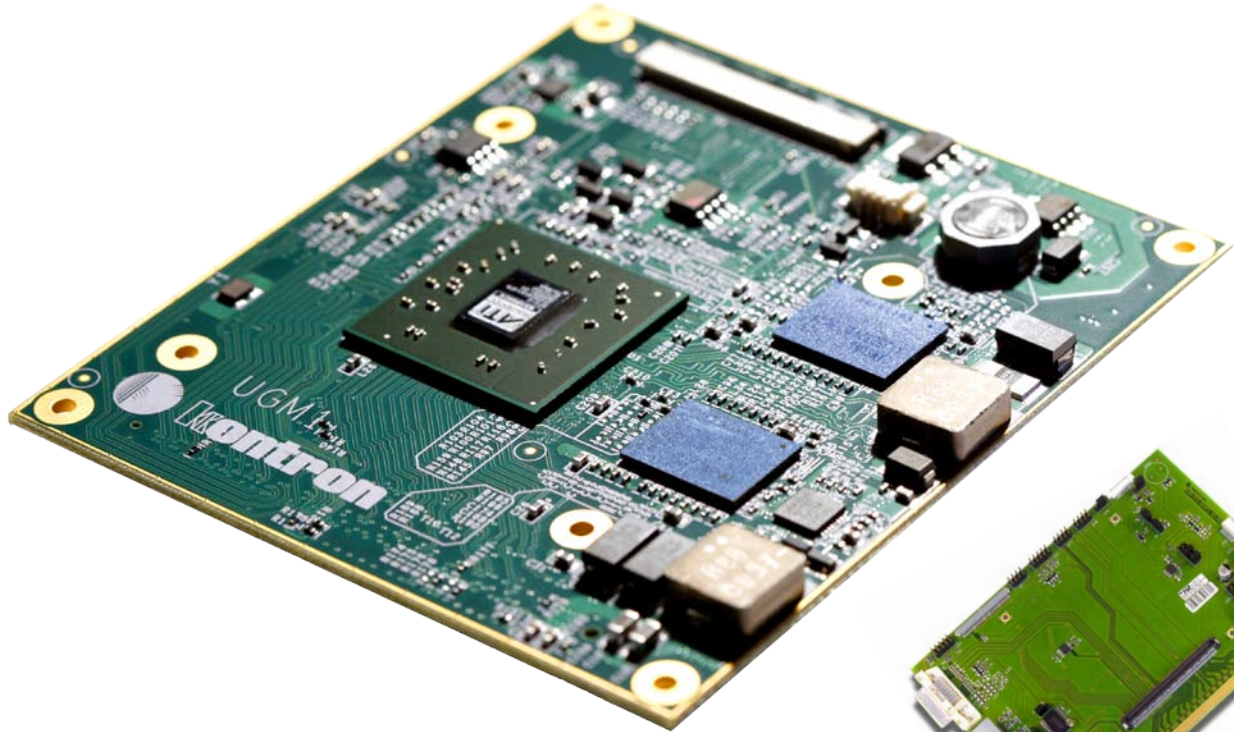




UGM-M72

The “Universal Graphics Module”



optional PEG-Adapter board



- First modular graphic card for Computer-on-Modules
- High graphic performance with ATI M72 (ATI Radeon™ HD2400)
- For low profile designs
- Longterm availability
- 2 and more displays possible
- Passive Cooling

➤ Product Overview

In 2007, Kontron listened and responded to customer's needs in the development of the **Universal Graphics Module (UGM)** concept and formation of the UGM consortium. More and more, the embedded market has to control and feed many high-end displays with tons of information without sacrificing excellent 3D graphic performance. The UGM standard - the first standard for embedded graphic cards - defines a 95 x 84 mm universal graphics-on-module which supplies monitors with all current and future graphic card signals in demand.

The concept is similar to the **COM Express™** concept: Via the rugged AMP/TYCO connector, UGM cards connect to max. PCI Express x16. With its own independent frame buffer memory, the graphics processing unit (GPU) generates the output video signals available on the rugged 220pin module connector. Thus, no breakout cables are required. To control more than 2 displays independently, UGM-M72 allows for sharing PCI Express to several graphics modules. To learn more about the **open standard** and its members, please visit: <http://www.ugm-standard.org>

➤ Key benefits

- ✓ High 3D and video performance – offloading the CPU significantly
- ✓ Display Wall capable – 2 or more displays
- ✓ Simplified design – Lowers design risk dramatically on a high dynamic graphics market
- ✓ Complementarity to customized solutions with COM Express™ modules
- ✓ Scalability – more flexibility and exchangeability – just plug in the required graphic power
- ✓ UVD Universal Video Decoder for High Definition Video and Blu-Ray Technology (H.264/VC-1)
- ✓ Specification is an open standard

➤ Target Applications

- ✓ Infotainment, Gaming, Media-Entertainment, Medical

➤ Technical Information

| Graphic processor | ATI-M72 (ATI Radeon™ HD2400) GPU DirectX® 10, PS 4.0, OpenGL 2.0, Blu-ray technology |
|-------------------|--|
| Memory | GDDR3-RAM |
| System Connector | UGM is fully connected to the system via a rugged 220-pin AMP/ Tyco 3-6318490-6 connector. |
| Power Consumption | uses a 12 - 22V +/- 5% power supply exclusively. Max. power consumption 15W |
| Host Interface | PCI Express x16, incl. x8, x4, x2 and x1 |
| Resolutions | 2048x1536 (VGA, LVDS), 1920x1200 (DVI, HDMI, TV) |

| Display Interfaces | 2 x RGB analog (VGA), 10 Bit color depth, 400MHz bandwidth optional TV out (using 2nd RGB port), NTSC, PAL, HD, Component, YuC and CVBS, support HDTV1080i 1 x single link TMDS, DVI / HDMI support 1 x LVDS single- / dual-link, 18-, 24-Bit support 1 x Video Capture Port (VIP), ITU-656 compatible, 150MHz |
|--------------------|--|
| Form Factor | UGM concept: 84 x 95 mm |
| Temperature (*) | operation: 0° to 60°C, storage: -30° to 85°C |
| Humidity | operation: 10% to 90%, storage: 5% to 95% (non condensing) |

(*) Ask about extended temperature ranges

➤ Ordering Information

| Article | Part.-No. | Description |
|----------------------|-----------------|---|
| UGM-M72 | 41001-1280-00-0 | High End Graphic Module based on ATI M72 with 128 MB RAM |
| UGM-M72 | 41001-2560-00-0 | High End Graphic Module based on ATI M72 with 256 MB RAM |
| UGM-PEG-ADAPT | 41101-0000-00-0 | Adapter to connect UGM-Module to a standard PEG-interface (e.g. on motherboard) |
| UGM-M72-HSP Threaded | 41001-0000-99-1 | Heatspreader for UGM-M72 (UGM Rev. 1.1) |
| UGM Evaluation Board | 41100-0000-00-0 | UGM Evaluation Board for COM Express™ modules |

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