AMG System Ltd
Ethernet Software Design Engineer Specification

Background

AMG Systems is a well-established UK designer and manufacturer of specialist Layer 2 and Layer 3 Ethernet based network transmission equipment for the growing worldwide security and transportation surveillance market.

AMG Systems has a comprehensive product range with many unique benefits. The company's products allow System Integrators to deliver substantially enhanced functionality at significantly reduced whole life costs.

See the company website for further details of specific projects - *www.amgsystems.com*

The Position

Reporting to the Principle Software Engineer, the successful candidate will expect to have a hands-on role actively managing and implementing both the current, and new range of Ethernet based managed switch product developments. As typical in a small company environment, although primarily responsible for product engineering, the right candidate will be exposed to, and be expected to support, to all aspectsof AMG's business.

The candidate will work in a fast-paced, high-energy team focusing on design, development, maintenance and deployment of embedded software for Industrial grade Multi-Service L2/L3 managed Ethernet switches.

The candidate must possess a Bachelor or Master of Science degree in Electrical Engineering or Computer Science. Ideally, total experience required is a Bachelor's degree and 10 years.

Responsibilities include

➢ Development of Ethernet switch software including feature definition, design, development, testing, maintenance and support.

➢ Networking Silicon bring-up and driver development.

➢ Design & development of Layer2 (Switching)/Layer3 (Routing) protocols.

➢ Linux Kernel Development, Optimization and Maintenance.

➢ Debugging customer issues in the field.

➢ Enhancing field serviceability of the existing software modules.

➢ Work closely with the Hardware, Marketing and Manufacturing teams.

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Company Registration Number 2838846. Registered Address: Brigham House, High Street, Biggleswade, Bedfordshire, SG18 0LD

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Job Requirements

- Experience in product development of least 3 to 4 commercial Ethernet switch products from conceptual idea to end product.

- A high level of experience on Commercial Networking SOCs from Marvell (Linkstreet/Prestera/SOHO/Alleycat/Poncat/Aldrin family).

- A high level of Experience on Commercial Physical Layer SOCs from Broadcom/Marvell/Vitesse.

- Experience in design/development/maintenance/customer deployment of Ethernet/IP based network protocols.

- A high level of understanding and product development experience involving PHY-MAC connectivity interfaces such as GMII/SGMII/RGMII/XAUI.

- A high level of domain knowledge in L2 and L3 Ethernet switching and routing protocols & applications covering 802.1Q VLANs, 802.1D STP, 802.1W RSTP, IGMP Snooping and 802.3ad standards.

- Understanding of Ethernet switch Hardware Architecture and Schematics.

- A high level of experience in writing embedded software in a multi-threaded environment and in using debuggers in real time environment.

- A high level of Programming skills using C in Linux embedded platforms.

- Must have mastered the RTOS fundamentals, interrelationships between DMA engines, interrupts, Interrupt Handling, Global Interrupt Handling, Memory Virtualization, User/kernel space, race conditions and perimeter locking.

- In-depth knowledge of Linux Kernel functionality and architecture including knowledge of networking, memory management, process management, power management etc.

- Solid understanding of protocols & interfaces like SPI, I2C, MDIO, RS-232, RS-485, RS-422.

- Must have excellent communications skills and quick learning capability, willing to be involved in network design efforts with our direct customers, helping in their deployment and maintenance phases.

Desirable Requirements

- Experience on working in buildroot based development environment.

- C++ under Linux and Windows

- Linux Bash shellscript (or similar)

- Experience of Live555 (or similar) video streaming protocols, RTSP, Unicast, Multicast

- Exposure to Video Codecs eg MPEG4, H.264

- Embedded systems, bootloaders, flash memory

- Imaging libraries eg. OpenCL, OpenGL or DirectX

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Job Title

➢ Ethernet Software Design Engineer

Location

➢ AMG Systems Ltd, 3 The Omega Centre Stratton Business Park, Biggleswade, SG18 8QB

Or

➢ AMG Systems Ltd, 4 Pioneer Way, Castleford, WF10 5QU

Remote / Flexible working is also available

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