

Gianni Pucillo

Skills and Knowledge of C language and Assembler

Reverse order history:

At Siemens Mobility in Prague I refreshed my skills using the STM32 with Atollic TrueSTUDIO and Linux Debian for embedded systems, and MVB bus.

With the IBM Mainframe I had experience with HLASM along with XDC debugger, that led me to know and work with the zSeries microprocessor architecture.

Later I studied and worked with many ICs: sensors, LCD displays, communication buses, transducers, last generation and brand name of microprocessors, microcontrollers, SoC and SBC, transceivers, wired and wireless communication, etc.

For my [Term3D](#), [VisProject](#), [PCRemote](#) and [PCAnalyze](#) applications, I used x86 assembler extensively for dedicated math functions, function calls, I/O boards (such Intel 8255), I/O interrupts and DMA handling (such ATDIO-32F by National Instruments).

I made wide use of Assembler in the μ C/OSII [RTOS](#), for the **Rabbit Semiconductor R3000 microprocessor** with DynamicC IDE available on LP3500 and RCM3700 SBCs. Though the MON186 developing environment was basically in C language, the Falcom intelligent GSM equipped with AMD186 was improved with some functions written in Assembler.

During this period I developed a **Video Timing Parameterization** application (Philips, Milano). This was written in C language and Assembler (under DOS Extender OS) for an S3 graphic chipset as well as a MGA Matrox chipset. The application was committed to handle analog signals and to drive video timing parameters.

At the beginning of my freelance activities, I wrote **graphic display drivers** for Crystal Graphics (Santa Clara, California, [March and July congratulation fax](#)), Nemetschek (Munich, Germany), and Halo (Silver Spring, Maryland). I introduced lines of code in Assembler to speed up particular MGA registry functions.

During the transition from full time employee (link to [employer reference](#) letter) to independent contractor & consultant (while looking to be [hired at Matrox](#) in Canada), I developed a **2D SDK graphic library and real-time graphic CLI, script language and command interpreter**, running under DOS, DOS Extender and LynxOS. The library was developed for the Matrox MGA series graphic microprocessor (Titan, Athlas, Dubic, Athena, Storm, MGA-2064W formerly Millennium), and was written in C and Intel x86 Assembler. This library was customized for the company Sipar (Trento – Italy) and used in their **high speed image transfer** project, running on LynxOS, with two MGA Millennium boards installed. Gilardoni also used the same library for its **X-ray digital image representation** project, to graphically display images captured at high speed.

When I was a product manager at Matrox (link to [appreciation](#) fax), I acquired experience in C language and Intel x86 assembler (in DOS and Microsoft Windows) by **supporting application developers**. C language became the principal language, while Assembler still helped to speed up some critical functions and real-time event handling.

Using **MOS Technology 6502**, I wrote embedded software for industrial machines driven by micro-computers such as three-roller sheet metal calender, ultrasonic plastic welding machines, X-ray photographs motorized slider, keyboards firmware, etc.

I learned **Assembler** at high-school, part of the Digital Electronics course. I have had a passion for Assembler language since that time.

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