

Mapping a course for innovative design solutions

*Applied know-how in electronic  
and real time software systems*



**sysacom**  
R&D Plus

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# Mapping a course for innovative design solutions

Sysacom is a firm dedicated to the development of electronic products and systems. We show expertise in this particular field. We possess all the knowledge required to make your next product a winner. We'll take advantage of the most suitable technology there is and deliver your final product in time.

Our team has expertise in various domains covering every aspect of your future electronic product:

- Electronic systems and circuits design
- Programmable circuits development
- Software development
- Printed circuit board design
- Assembling and prototyping

We have regular customers coming from these various fields:

- Biomedical
- Military and Avionic
- Industrial control & Power electronics
- Communication, Embedded Internet
- Acoustics, Audio
- Optical, Laser
- Automotive and Transportation
- Security



All our customers show their satisfaction by bringing us new products to develop on a regular basis. This, and the constant growth of the company, is a testimony of the competence and know-how of Sysacom R&D plus.



# Electronic systems and circuit design



In order to fulfill every feature of your next product, we will apply all kinds of well-mastered technologies. We build analog and peripheral circuits, digital microcontroller circuits, programmable circuits using FPGAs and CPLDs, digital signal processors (DSP). Electronic and Real Time Systems are common things for us.



Today's technology enables us to conceive systems with thousands of logic gates, systems that can handle millions of math operations per second. Your imagination is nowadays the only limit of your product.

Our experience of military and industrial products qualifies us to build well-protected circuits that will resist better to harsh environment like power surges, short circuits, extreme temperatures etc.

Our high volume manufacturing experience will assure you the lowest possible production cost. Why use a too powerful and expensive solution when a more simple and affordable will meet every requirement!



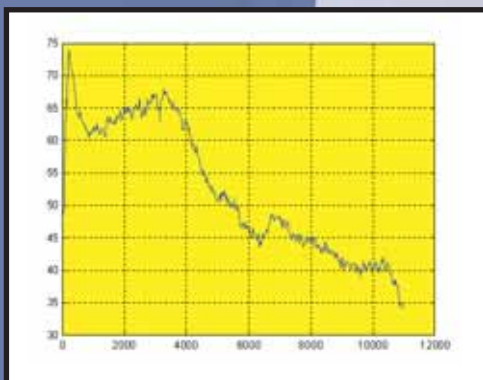
A product's quality stands on the quality of its hardware and software design. Our team's skill is a sure success.

# Software designing



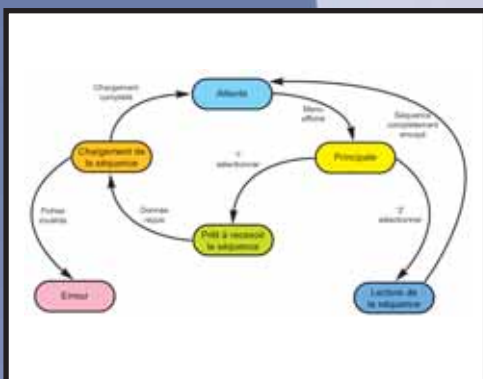
Software is now part of almost every technology. We tend to associate software with personal computers, as for Sysacom, software also means traffic signaling, motor controllers, Inverters, optical controllers, audio and video signal processing.

We design software for embedded systems, signal processing, drivers for Windows® and control systems.



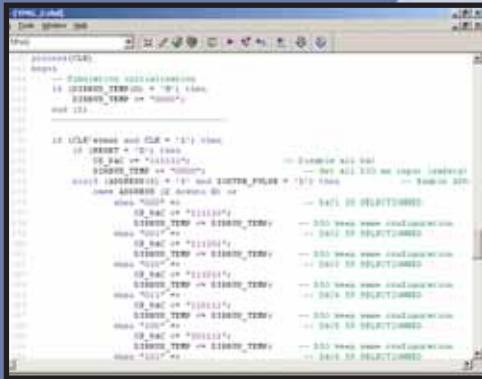
In order to fulfill the ever increasing demand for commercial and industrial applications using Internet communication, Sysacom has developed an outstanding expertise in communication protocols like TCP/IP, UDP, PPP, HDLC just to name a few. We possess every needed source code to satisfy Internet protocols.

We also wrote our own embedded operational system (OS) that we could implant in your product to facilitate its design.



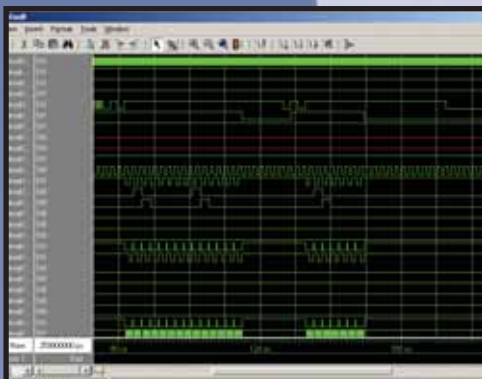
The path taken to end up with an efficient piece of software is one that respects a well-structured methodology. At Sysacom we always follow a well-established process that includes a complete documentation. We start with a specification document followed by a design document, a fully annotated 'coding' meeting our high standards and a series of elaborated tests.

# Programmable circuits design



```
process(CK)
begin
  -- Generating initialization
  if (INIT = '1') then
    DOUT_TEMP <= '0000';
    DOUT_TEMP <= "0000";
    out <= '0';
  end if;

  if (CLK'event and CLK = '1') then
    if (INIT = '1') then
      DOUT_TEMP <= "0000"; -- Enable all out
      DOUT_TEMP <= "0000"; -- Set all 320 Hz input (output)
      out <= (DOUT_TEMP <= '1') and DOUT_PULSE <= '1'; -- Enable out
      out <= (DOUT_TEMP <= '1') and DOUT_PULSE <= '1'; -- Enable out
    else
      out <= '0'; -- Set 00 SELECTED
      DOUT_TEMP <= DOUT_TEMP; -- Set new new configuration
      out <= '0'; -- Set 00 SELECTED
      DOUT_TEMP <= DOUT_TEMP; -- Set new new configuration
      out <= '0'; -- Set 00 SELECTED
      DOUT_TEMP <= DOUT_TEMP; -- Set new new configuration
      out <= '0'; -- Set 00 SELECTED
      DOUT_TEMP <= DOUT_TEMP; -- Set new new configuration
      out <= '0'; -- Set 00 SELECTED
      DOUT_TEMP <= DOUT_TEMP; -- Set new new configuration
      out <= '0'; -- Set 00 SELECTED
    end if;
  end if;
end process;
```



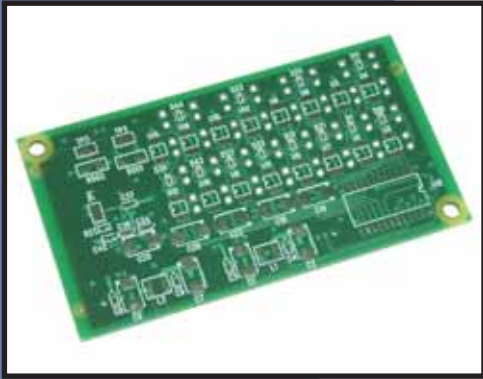
Our specialists have seen lots and lots of programmable circuits. With their huge stock of knowledge, they will develop your circuit's configurations no sweat with a guaranty to meet all of your specifications.

We'll do ASIC to FPGA conversion. We can use VHDL or Verilog to develop your configurations.

We carry a wide range of experiences: Pulse width modulator, Phase Lock Loops, Modulators, Demodulators, ARINC interface, Quadrature Decoder, 32-bits controller interface, etc.

We can also have one of our specialists join your team during intensive periods of development.

# Printed circuit board design

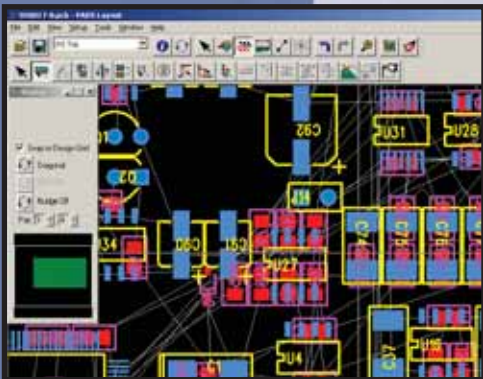


A well-seasoned and field proven team is dedicated full time in designing printed circuit boards for a wide range of products.

Starting with a given schematic, we will generate all the necessary files needed to manufacture and assemble your boards, respecting the industry standards, preventing unfortunate delays and assuring conformity with the finish product standards.

We have designed thousands of printed circuit boards, we can therefore meet any of your circuit's requirement:

- Analog and digital
- Multilayer circuits
- Controlled impedance traces
- Surface mount
- High density, TSSOP, BGA, PQFP, TQFP, etc
- High voltage
- High current
- Power supplies, DC/DC, PWM



*We will use any of the following software for your project:*

- PADS LAYOUT (High Speed)
- PCAD
- ORCAD
- ALLEGRO (CADENCE)
- PROTEL
- DESIGNWORKS



By relying on our PCB designing team, you will always get a perfect solution given by specialists.

# Assembling, prototyping and testing



We have a team to build and assemble prototypes. We assemble boards and will install them in enclosures.

Our skill permits us to build all kinds of prototypes;

- Through holes assembling
- Surface mount assembling
- Casing assembling of prototypes
- Assembling of test stations



In order to exhibit your future products to your potential customers or to the marketing department, your product must look its best. Although they are still prototypes, we make sure that they look as close as possible to the production item. Also, to insure quality and performance, this team will perform numerous tests like temperature, performance, electrical etc.



# Sysacom R&D plus history



- Denis Lachapelle established Sysacom R&D plus in 1995.
- Moved to Le Gardeur in 1997 in a more spacious office.
- Research & Development activities started in year 2000.
- In 2001, Sysacom includes some employees as partners of the company; Steve Hins and Mathieu Fortin.
- In 2003, Sysacom and Les circuits imprimés Galin are joined together. Gaétan Fortier becomes partner.
- In 2004, Sysacom has 15 employees including 6 engineers.
- In 2005, Sysacom gets twice as much space for its offices.



#### Customer's satisfaction:

- Guaranteed by our background
- Guaranteed by our team

Our customers are manufacturing thousands of units yearly.

Denis Lachapelle eng.,  
*President.*

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