

FELIX C. QUINTANAR

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SUMMARY OF EXPERIENCE:

Electrical Engineer with over twenty years of experience in all phases of electronics, including design, embedded programming, process, management, manufacturing, repair and troubleshooting.

- Prototypes R&D design.
- Circuit Design: Digital and Analog.
- Wireless communication design: Infrared and RF.
- Consumer Electronic: Audio, Video, Lighting, Sensors, etc.
- Electronic Manufacturing and Process.
- Business: IP, Embedded Software and Electronic Consultant.
- Six Sigma Green Belt Certified
- Project management
- Patents granted.
- Real time embedded software design.
- Medical electronic design. TENS, Wireless ECG, Interfaces etc.
- Compliance certifications: UL 60601-1, FCC, FTC, TUV and CE
- Scientific Instrumentation design.
- Optoelectronics, Optics and Laser devices design.
- Mechatronics and Power Supply design.
- CAD design techniques: OrCAD CIS, Eagle, Allegro, etc.

CAREER & PROFESSIONAL SUMMARY:

- Over 20 years of experience in firmware, hardware and software development in medical, consumer and science field.
- Strong experience as a lead Electrical Engineer for project development
- Experience in Project/program management including scheduling, cost and resources.
- Experience in managing supplier and OEM interactions both domestic and international.
- Strong experience designing and constructing embedded real time control systems using microcontrollers, microprocessors, different memories, programmable devices (CPLD, PLD and FPGA), digital logics, operational amplifiers, A/D converters, D/A converters, serial and parallel communication interfaces, wireless communication interfaces, switching and lineal power supplies, power converters (AC/DC, DC/DC, etc), modulators, demodulators, etc.
- Strong experience designing hardware and software for LCD TFT displays and touch screen controllers, ECG/EKG devices and adapters, smart cables and sensors, HB LEDs Light Fixtures, USB interfaces, Bluetooth® modules interfaces, amplifiers, servers, Ethernet network hubs and switchers, keypads, Audio/Video preamplifiers, Audio/Video receivers, infrared receivers, infrared repeaters and routers, MP3 rendering modules, XM and Sirius receivers, RDS (RDBS) FM tuners, AC current controls, proximity sensors, wireless RF modules, automatic muting volume controls, communication peripherals, wireless remote controls, communication devices, automatic test equipments and test fixtures.
- Proficiency on programming languages: various assembly languages embedded C, C and C++.
- Experience in mechatronics control and interfaces techniques: Stepping motors, DC and AC motors, control valves, pumps, smart sensors interface, etc.
- Strong experience working and designing using optoelectronics and optics (HB LEDs, lasers, photosensors, photodetectors, infrared receivers, lenses, fiber optics and filters.
- Strong digital electronic design skills, from the electrical diagram up to the printed circuit board.
- Digital design using PLD, CPLD, and FPGA with low voltage flash technologies, Experience designing finite state machine diagrams, VHDL, schematic editor and simulation (Quartus II version 4.1 MAX3000A family from Altera, Foundation V2.1i XC9500/XL/XV family and ISE 6.1i from Xilinx and Warp version 6.3 Ultra 37000 family from Cypress). Lattice LC42xxxZC CPLD family.
- Strong firmware/hardware designer using different RISC CMOS or flash microcontroller and peripherals such as Microchip (PIC's and dsPic33Fxx), STM32 family ARM Cortex™-M3 core from STMicroelectronics, ARM7TDMI-S core System on chip from NXP Semiconductor (LH754xx) and (LPC21xx), AVR family (ATMegaxxx and ATtinyxxx) from Atmel, Motorola (M68HCXX's), Cypress (PSoC CY8C2XXXX's, CY8CLEDxx and Power PSoC), Zilog (Z80's) and Intel (8051's). Texas Instruments DSP's TMS320CV5416 and TMS320CV5510.
- Experience in compliances certifications: UL 60601-1, CSA, FCC, FTC, TUV and CE.
- Strong experience in ECG/EKG monitoring systems, electrotherapies medical equipments (TENS) and laser medical equipments
- Familiar with FDA QSR (21 CFR 820), ISO 13485:2003 and FDA Good Manufacturing Practices (GMPs),
- Experience in medical certifications: FDA 510(k) and ISO 13485:2003. Primarily responsible for the documentation and submittal of FDA 510(k) traditional K071120 and abbreviated K071751.
- Six Sigma Green Belt Certified.
- Knowledge of Windows, Microsoft Office, Microsoft Visio, Lotus, Lotus WordPro, WordPerfect, DOS and Internet.
- Knowledge of CAD techniques: OrCAD CIS, Eagle, Allegro, Altium (Protel), Pspice, CAM 350, Micro-cap, MultiSIM and AutoCAD.
- Strong skills in hardware and software troubleshooting. Have successfully resolved product failures through methodical investigation, analysis, testing, resulting in improved quality and customer satisfaction after failures corrections.
- Knowledge working with Emulators, Debuggers, Simulators, Oscilloscopes, Logic analyzers, Spectrum analyzers, Audio analyzers, etc.
- Experience in quality control, process, maintenance, electronic rework, failure analysis, machine utilization, production schedules, materials or parts purchases, etc.
- Fluent in English and Spanish languages.

- Proficient at problem detecting and solving, organizing and prioritizing tasks with proved ability to work with individuals in all levels.
- Self-directed, multitask oriented, pleasant, well-groomed and professional appearance and manners.

PATENTS:

- Patent US6653899: *Audio amplifier power and temperature controller having network detecting and associated methods.* Nov. 25, 2003.
- Patent US6448857: *Audio amplifier controller having soft start circuit protection and associated methods.* Sep. 10, 2002.
- Patent USD597211: *Electronic Stimulus Device.* Jul. 28, 2009.
- Patent Pending US2002/0186573 A1 2002-12-12; App. No. 10/207,318: *Alternating current soft start circuit.* Jul. 29, 2002.
- Patent Pending US2005/0047794 A1 2005-3-3; App. No. 10/651,319: *Infrared remote control receiver and systems.* Aug. 29, 2003.
- Patent Pending US2005/0181341 A1 2005-8-18; App. No. 10/777,498 *Self-contained electronic muscle-skeletal stimulation apparatus and method of use.* Feb. 12, 2004.
- Patent Pending US2009/0216294 A1; App. No. 12/345,144 *Self-contained electronic muscle-skeletal stimulation apparatus and method of use.* Dec. 29, 2008.
- Patent Pending App. No. 12/020,156 *Radiolucent electrode or sensor assembly.* Jan. 25, 2008.
- Patent Pending *Systems and methods for a wireless sensor proxy with feedback control.* Jan. 18, 2009.

PROFESSIONAL EMPLOYMENT HISTORY:

01/2009-Present	<p>Affineon Lighting. Coral Springs, FL http://www.affineonlighting.com Director of Engineering designing and manufacturing solid state LEDs light fixtures, universal constant current switching power supplies and automation control circuits for industrial application. Responsible for the hardware and embedded software design of various HB LEDs RGB and HB White LEDs light fixtures with industrial communication interfaces (DMX512A, RDM, 0-10V, etc). Designed HB LEDs Light Fixtures with ambient light sensing, motion detection and proximity sensing techniques. Designed professional flicker free dimming techniques with color compensation. The HB LED technology is now the most efficient light source, as well as the longest lasting. It involves selecting the correct LED for each application, designing the circuit board to properly drive the LED, managing heat transfer, choosing the correct power supply to maximize efficiency, selecting proper optics to place the light where it needs to go, and also communicating with complex consoles and control interfaces.</p>
03/2000-Present	<p>AEMED Incorporated. Miami, FL http://www.aemed.com COO. Cofounder. Senior Electrical Engineer/Software Engineer researching and developing digital embedded controls systems (hardware and software) for electrotherapies medical devices that use muscle-skeletal electrical stimulation techniques, electrical acupuncture and Transcutaneous Electrical Nerve Stimulators (TENS). Conceiving and documenting possible intellectual properties of different medical apparatus and systems. Developed StimPad TENS system FDA 510(k) K071120. Assuring and implementing FCC, CSA, CE and UL. Implementing and introducing electrotherapies medical devices in manufacturing process.</p>
03/2005-01/2009	<p>LifeSync Corporation. Fort Lauderdale, FL http://www.lifesynccorp.com/ Director of Engineering, Distinguished Engineer designing the hardware and software of the next generation of ECG smart cable LeadWear® with privacy protection. Project/program management including scheduling, cost and resources. Conceiving and documenting possible intellectual properties for the new version of disposable LeadWear® with more features. Develop and launch various LeadWear® versions. Developed and launched new ECG/EKG Adapter Cables FDA 510(k) K071751. Developed and launched improved LifeSync® wireless ECG transceivers. Conducted dFMEA, pFMEA, SMT Process Validation, Design reviews, V&V and Design Transfer to Manufacturing. Developed ECG transceivers system and product requirement specifications, conceiving and documenting possible intellectual properties. Creating and designing digital embedded control systems (hardware) for the next generation of the LifeSync® wireless ECG transceivers adding other vital signs monitoring such as respiration and pulse oximeters SpO2. Preparation and participation in audits by FDA and European regulatory bodies. Establishing quality control standards. Implementing and introducing the LifeSync® ECG wireless in manufacturing process. Leading sustaining engineering, troubleshooting and technical support. Spearheads the LifeSync® failure analysis mode which resulted in improved FDA compliance.</p>
05/1998-03/2005	<p>Niles Audio Corporation. Miami, FL http://www.nilesaudio.com/ Senior Electrical Engineer creating and designing digital embedded control systems (hardware and software) for automatic test equipments, amplifiers, servers, network, hubs, keypads, preamplifiers, receivers, infrared receivers, infrared repeaters, wireless RF modules, automatic muting volume controls, peripherals interfaces, wireless remote controls and communication devices. Developing system and product requirement specifications and user manuals. Conceiving and documenting possible intellectual properties of different apparatus and systems. Assuring and implementing UL, CSA, ETL, FCC, FTC and CE compliances certifications. Designing test engineering fixtures and</p>

procedures establishing quality control standards. Implementing and introducing apparatus in manufacturing process. Offering sustaining engineering to customers and the technical support group. Leading teams during project development process. Project/program management including scheduling, cost and resources.

09/1996-05/1998

Future Tech International. (μ Bell Microproducts)

Miami, FL

<http://www.bellmicro.com/Company/default.asp>

Manager of the Surface Mount Technology (SMT) assembly line, Process Engineer managing production manufacturing concepts and processes such as: production schedules, materials or parts purchases, estimating production time, inventory, productivity, costs, maintenances, reworks, failure analysis, quality control, work flow, routing, floor layouts, material handling and machine utilization. Improving workforce utilization, space requirements, work flow, and design layout of equipment and workspace for maximum efficiency. Programming and assembling product designs for screen printer, pick-and-place machine, wave soldering and reflow ovens.

09/1986-09/1996

TECE, SA and Center for the Development of Equipment and Scientific Instrument
(Cuban Scientific Academy)

Havana, Cuba

<http://www.tece.cu/>

Senior Electronic Engineer designing different instrument such as laser polarimeters (LASERPOL), laser medical equipments (LASERMED), electrotherapies medical devices, gas analyzer, photo colorimeters, and thermometers.

EDUCATION:

1996-1997

➤ University of Central Florida. Degree validation in Bachelor of Science in Electrical Engineering. Orlando, Florida.

1981-1986

➤ Polytechnic Superior Institute J.A.E (Havana University). Bachelor of Science in Electronic Engineering. Havana City, Cuba. ➤ Graduated Summa Cum Laude.

PROFESSIONAL ASSOCIATIONS:

- Member, Institute of Electrical and Electronics Engineer (IEEE). IEEE Signal Processing Society. IEEE Engineering in Medicine and Biology Society. IEEE Industry Applications Society.
- Member, Association for the Advancement of Medical Instrumentation (AAMI).
- Member, International Society of Six Sigma Professionals (ISSSP).

PERSONAL:

- US Citizen.
- Married.
- Two children.

REFERENCES:

- Available under request