

EDSON PAIVA

Electrical Engineer



ABOUT ME

Hello! I'm Edson Paiva, Independent Contractor, expert Electrical Engineer with over 40 years of extensive experience in analog and digital projects.

I have managed my own company in Brazil (BPS) for over thirty years until I was invited to work and live in the USA.

Currently my two sons, Electrical Engineers too, are in charge of the company BPS - Brazil.

I'm very passionate and dedicated to my work.

I love challenges and I aim to make a difference by reducing costs through quick and creative solutions.

Name: Edson Fabbri Paiva

Birthplace: Sao Paulo, Brazil

Residence: Central Florida, USA

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Independent Contractor: Yes

Freelance: Available

My SKILLS

EXPERTISE

DESIGN EXPERIENCE

- Microcontrollers embedded systems
- C and Assembly languages programming
- Internet of Things (IoT) design
- Custom GUI Software
- RF (UHF/VHF) circuits design
- Audio & OP-AMPS circuits design
- Two-Way Radio Systems
- Analog and digital cordless telephones
- Tone encoders and decoders
- Narrow Band digital encoders & decoders
- Tone signaling
- Active and passive filters
- Switching and linear power supplies

PRODUCTS DEVELOPMENT

- Components research
- Hardware design
- Firmware and Software writing
- Schematic drawing
- PCB layout design

MANAGERIAL CAPACITY

- Small companies' management
- Management of development departments
- Create and teach company training courses

SOFTWARE

Windows	90%
Linux	75%
CodeBlocks & SDCC Compiler	90%
MPLABx & CCS PICC Compiler	95%
Altium Designer	90%
MS Visual Studio	90%
Inno Setup Compiler	85%
SQL Server Mgmt Studio	70%
Visual Studio Code	85%
PlatformIO	90%
Arduino IDE	80%
Java NetBeans	85%
Android Studio	75%
WordPress	75%
Photoshop	85%
Multisim Circuit Simulator	80%
MathSoft MathCad	80%
Tango SCH & Tango PCB	95%

LANGUAGES

C	95%
C++	80%
C#	85%
VB.NET	90%
ASP.NET	75%
Java	80%
Javascript	70%
SQL	60%
Android	75%

MICROCONTROLLERS

Espressif: ESP32	90%
Espressif: ESP8266	75%
Microchip: PIC12/16/18	95%
Microchip: PIC24, dSPIC	80%
Freescale: HC05, HC11	95%
8048, 8051, 8052	90%
8080, 8085, Z80	90%

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ACCOMPLISHMENTS

I was responsible for the design, maintenance and operation of the cordless telephone system used in live voice trading sessions of the Stock Exchange and Commodity Exchange in Sao Paulo.

The system operated for over twenty-four years, from 1985 to 2009, without a single interruption due to technical failure.

In 2009 the open-voice trading floor was replaced by computers, but the cordless telephone system is always fondly remembered by former operators missing the good old days.

In 1982 I designed the first Brazilian multichannel synthesized UHF/VHF transceiver using digital PLL for frequency generation instead of crystals.

In 1979 I developed and manufactured the first Brazilian Audio Graphic Equalizer, using solid state impedance gyrators, implemented with low noise transistors, to replace the traditional coil inductors.

My HISTORY

EDUCATION

1970 - 1975

BACHELOR OF SCIENCE: ELECTRICAL ENGINEERING (5 years course)

POLYTECHNIC SCHOOL OF THE UNIVERSITY OF SAO PAULO, SP, BRAZIL

1958 - 1969

ELEMENTARY SCHOOL, MIDDLE SCHOOL AND HIGH SCHOOL

PUBLIC SCHOOL, SAO PAULO, SP, BRAZIL

EXPERIENCE

2021 - Present Day

WEB DESIGNER

EDSON PAIVA ENGINEERING, ORLANDO, FL, USA

- Working as Independent Contractor to BPS - Brazil: <https://www.bpsinternet.com.br/>
- Create and setup the website: <https://www.edsonpaiva.com/>

2019 - 2021

SOFTWARE ENGINEER (Independent Contractor)

COMMUNICATIONS SPECIALISTS INC, ORANGE, CA, USA

- Firmware for a Telemetry Receiver.
- C algorithm to generate any frequency from 90 MHz to 520 MHz in 1Hz steps for a fractional PLL IC.
- Windows GUI software to test, simulate and visualize the PLL frequency synthesis algorithm.
- PC Communication Software for the Telemetry Receiver programming.
- Data Interface Receiver using M5STACK/ESP32. It has color display, SD Card data storage and sends data to the internet via Wi-Fi.
- M5STACK/ESP32 Data Logger with color display, SD Card data storage, and PC serial interface.
- Windows GUI for production programming of M5STACK/ESP32 flash memory.
- Electronics schematics drawing and PCB layouts double checking.
- Manual assembly of Proof of Concept Prototypes.

2015 - 2019

ELECTRONICS R&D ENGINEER

IWS INSTITUTE FOR WILDLIFE STUDIES, ARCATA, CA, USA

- Development of the Firmware and Software for the RF products used in Telemetry and Wildlife Research.
- SQL Server Compatible Database Web System for Wildlife Data Log and Storage.
- Wildlife Data Transceiver connected via Bluetooth to a Tablet/Smartphone to store and to send wildlife data to the internet.
- Android Application to transfer wildlife data from Bluetooth to Internet via Wi-Fi.
- Android Database Application which interfaces to an UHF Wildlife Data Transceiver via Bluetooth.
- Wildlife Data Receiver using a Raspberry Pi to store and to send wildlife data to the internet via Wi-Fi.
- Raspberry Pi GUI Application which interfaces to an UHF Wildlife Data Transceiver.
- UHF Data Interface Receiver which transfers the wildlife data to a PC Computer via USB.
- Windows GUI to transfer wildlife data from USB to Internet.
- Analog Receiver with automatic channel pairing and RF level indicator.
- Low Power and Over-the-Air Programmable Pulsing/Data Transmitters.
- Development of a PC board to test and develop new products.
- Windows GUI for Microcontrollers Flash Programming, using encrypted hex files.
- Algorithm for TCXO's Frequency Digital Adjustment.
- Narrow Band Digital Data Transmission Proprietary Protocol.
- Handheld Multi Programmer for programming radio telemetry miniature devices parameters, using OTA (over-the-air) technology.
- Low Power Magnetic Switch for wildlife transmitters, using a solid state magnetometer.
- Programmable Motion & Position detectors for wildlife transmitters, using an accelerometer chip.
- Handheld Digital Data Transceiver.
- Digital Perimeter Receiver with automatic ID pairing and RSSI level indicator.

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CONTACT ME

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 Orlando, Central Florida

1985 - 2015 (30 Years)

DIRECTOR (Partner, 51% of the Company)

BPS COMERCIO E TECNOLOGIA LTDA, SAO PAULO, SP, BRAZIL

- Design, maintenance and operation of the cordless telephone system used in live voice trading sessions of the Stock Exchange and Commodity Exchange in Sao Paulo for over twenty four years without a single interruption due to technical failure.
- Company management and products development.
- Hardware design, electronic schematics draw, and printed circuit board layout design using computer simulations and CAD programs.
- Electronic components researching, writing of all software and firmware for the products and fixtures used in an automatic final testing & troubleshooting.
- Development of custom web based expert systems, programmed specifically to fulfill unique customer needs.
- Digital full duplex radio telephone using a single narrow band RF channel.
- GPS vehicle tracking system using GSM cellular network.
- Small area cellular phone repeaters.
- Telemetry and alarm systems using telephone line, GSM cellular network, and internet TCP IP protocol.
- Narrow Band MSK high performance modem.
- Microcontroller based DTMF encoders & decoders.
- Miniature CTCSS encoders and decoders.
- Miniature programmable single tone encoder decoder.
- Sequential tones encoders and decoders.
- Miniature selective calls modules using efficient and noise tolerant MSK data modulation.
- Voice scramblers.

1981 - 1985

TECHNICAL DIRECTOR (Partner, 8% of the Company)

TELEPATCH SISTEMAS DE COMUNICACAO LTDA, SAO PAULO, SP, BRAZIL

- Leader of the development laboratory.
- In charge of researching components and set up purchasing.
- Design and manufacture of UHF/VHF synthesized mobile transceivers, repeaters and portable radios.
- Development and manufacture of power supplies for transceivers and repeaters.
- Design and manufacture of rural radio telephones.
- Portable UHF/VHF synthesized Full Duplex Telephone.
- Half Duplex (Autopatch) and Full Duplex Radio Telephone for automobiles.

1979 - 1981

TECHNICAL DIRECTOR (Partner 50% of the Company)

TARKUS INDUSTRIA ELETRONICA LTDA, SAO PAULO, SP, BRAZIL

- In charge of the development laboratory, quality control, and manufacturing of Hi-Fi audio equipment.
- Design and manufacture of power amplifiers, preamplifiers, graphic equalizers and audio mixers.

1975 - 1979

DEVELOPMENT ENGINEER

IGB CONTROL TELECOMUNICACOES SA, SAO PAULO, SP, BRAZIL

- Professional public address systems for airports and subway stations.
- Power supply design for UHF/VHF radios and repeaters.
- Development of DC-DC power converters for railway use.
- Assisted the development of an Electronic Monitoring Brakes System for subway and rail.
- Participation in the development of the first touch-tone Brazilian telephone approved by TELEBRAS.
- Design of signaling modules for a rural radio telephone system.

1973 - 1975

ELECTRONIC ENGINEERING TRAINEE

IGB ELETRO SISTEMAS SA, SAO PAULO, SP, BRAZIL

- Design of a 10 Watts RMS automotive amplifier using germanium power transistors connected in bridge differential output.
- Design of an Audio Generator with 0.01% of harmonic distortion.

1971 - 1975

TEACHER OF MATHEMATICS AND STATISTICS

ESCOLA SUPERIOR DE PROPAGANDA & FUNDACAO BRASILEIRA DE MARKETING, SP, BRAZIL

- Linear, Exponential and Polynomial Correlation for Graphic Analysis of the Market.
- Use of Statistics in Sales Forecasting.