

Curriculum Vitae

Mr Jon Freeman B. Eng. Hons

Born 1956
Nationality British
Location West Somerset, UK
e: independent.thought@btinternet.com
t: 01984 639399
m: 07737 181122

A seasoned engineer, Electronic Design Consultant and Technical Author, 1979 to date.

Education

1991-4 - Bristol UWE (University of the West of England)

Read '*Digital Systems Engineering*'

Awarded '*Bachelor of Engineering*' degree with First class Honours.

1976-77 – Southampton College of Technology

Gained various City and Guilds certificates in Telecoms related subjects

-1975 - Beal Grammar School, Ilford, Essex

10 GCE 'O' levels plus 'A' level Physics.

1971 - Ilford Evening Institute

City and Guilds Radio Amateur Exam

As a mature student in the 1990s, I gained my First Class Honours degree in Digital Systems Engineering. VLSI Logic Design was my top subject at Uni where I scored 97% for course work and 98% in the final exam.

Experience Includes : -

- Design of analogue, power and digital hardware, and computer hard and software from the smallest embedded systems to industrial-scale automation, serving military and industrial clients, large and small.
- Software development – machine code, assembler, 'C', 'C++' code to run on devices from the smallest PIC processor through most popular architectures through the ages including DSP, Z80, 68000, Coldfire and all the rest. Most recent work focuses on the range of 'ARM Cortex' cores.

- Xilinx, Altera and Lattice CPLD and FPGA products – working with schematic and VHDL design entry
- PCB design – single sided, double sided PTH, multilayer
- Design of complete 'Embedded Systems' for many applications including RTOS, Interrupt driven code, telecomms instrumentation, motion control, traction, brushless motor drives and more.
- Comms protocols including QPSK, FSK, UART, I2C, SPI, Zigbee, COFDM, QAM
- A-D, D-A, PWM, LCD, Counter/timers, Structured IO, all common peripherals
- All positions within 'Teams' of many sizes and structures

Publications : -

[CNC from the Absoute Basics](#) – A series of articles published in 'Engineering in Miniature' magazine Sept 2013 to July 2014

[The Design of a Modern Electric Locomotive in 5 Inch Gauge](#) - A series of articles published in 'Engineering in Miniature' magazine October, November and December 2015.

[Electric Locomotives – A Look at Motors and Control Methods](#) – in Taunton Model Engineers quarterly "[Oily Rag](#)" magazine autumn 2016.

Other Interests and Activities : -

2007 – 2015 District Councillor, West Somerset Council

2007 – 2015 Board member – Exmoor National Park Authority

2015 - Board member – West Somerset Community Land Trust

2015 – 2016 Worked part time – West Somerset Railway Association (Design of electronic dynamo controller for 'Mk I' vehicles, mechanical engineering)

Recent examples of work (as hobby) in electronic hardware and software design, with mechanical design and construction of two computer controlled electric locomotives – Two Videos : -

June 2017 – Video of 'The Wedge' electric loco with explanation of the electronics and design - https://www.youtube.com/watch?v=Y1Io2_i0AXk



June 2017 – Video of second loco, un-named petrol-electric 7.25 inch gauge completing one circuit of Bristol Society of Model Engineers track at Ashton Court, Bristol - <https://www.youtube.com/watch?v=haVmo00o-oM&t=16s>