

Raphael Abrams

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Senior Electronics Design Engineer with a proven track record of developing for production at scale as well as delivering custom designs for multi-media events and interactive art.

FREELANCE EE AND ME – 2002 TO 2013, 2021 TO PRESENT

Prototypes, product engineering, large kinetic sculpture, RF debugging and certification, circuit design, clockworks

Clients include:

New York City High Line, Museum of Modern Art, Blue Man Group, Bloomingdales, Dame Products, Einstein Medical, 10X Beta, Heatseek.org, Artnofood design, FoxPro, Make Magazine, Google

LEAD HARDWARE ENGINEER, MANAGER AT GOTENNA, 2013 TO 2021

Created and validated the initial hardware prototype and firmware that resulted in \$1.3M in seed funding

Designed and launched goTenna's entire product catalogue of five unique hardware products, producing \$16M/yr in revenue and \$55M in funding

Wide range of experience with microcontrollers and associated peripherals, including the standards of I2C, SPI, and UART

Managed a team of three engineers, including an FPGA role, with an annual development budget of \$500,000

Designed all products with FCC compliance including EMC/EMI testing

Oversaw and collaborated on a process improvement for waterproofing that reduced relevant BOM costs by 70% and labor costs by 92%

Designed to American and European safety standards

Refined design that resulted in 50% improvement of RF link budget from the first generation product to the second generation product

Implemented product test and calibration fixtures

Created and maintained product timeline dashboards and departmental KPIs

Participated in cross-departmental hiring to pivotal roles like Chief of Staff, VP of Finance, Director of Human Resources, and Director of Product

Completed two management courses through Union Square Ventures

COFOUNDER AT NYC RESISTOR, 2008 TO PRESENT

Cofounder for NYC's original hackerspace

Participated in decisions to manage the \$100,000 annual budget

Serving as President on the current nonprofit board

Teaching introduction to electronics, soft circuits, soldering, and eCAD

General electronics mentoring and community outreach

PRESS

[Startups Seek Tech Solution to Net Neutrality Repeal](#) on The Wall Street Journal,
[NYCResistor Feature](#) on NYT, [iPods for Anarchists](#) on Wired.com,
[Ask An Engineer](#) on Adafruit.com

SKILLS

Electronic design, simulation, documentation, debugging, prototyping, testing

Interaction with supply chains and product lifetime management

eCAD (Altium, EAGLE, KiCAD)

Certification, FCC, EC, RF and safety standards

Radio engineering including integrated hardware and software radios,
RF design concepts, antennas, matching networks, power amplifiers,
LNAs, integrated front ends, etc.

Experienced on a wide range of test equipment
(oscilloscopes, vector network analyzers, spectrum analyzers, logic analyzers,
power loads, battery and power analyzers, multimeters, etc.)

Mechanical CAD, CAM, light CNC metalworking,
fabrication with engineering plastics, 3D printing

Product feasibility analysis, technical communication

C for embedded firmware