

Michael T Kosco

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OBJECTIVE:

Seeking full-time / part-time / consultant / contract work as a digital FPGA, ASIC and/or board design engineer. I specialize in taking a product idea from concept through production in the US or China.

EXPERIENCE:

2017 - 02/2022

Intellivision Entertainment (VP Hardware Engineering)

Electrical Architecture and design (4 PCBAs), Managed Electrical and Firmware Teams, Established and maintained relationships with key component manufacturers / distributors / contract manufacturers.

- Intellivision Amico Console: Electrical architecture and design. Architecture designed around the Qualcomm APQ-8053 chipset. The console feature set includes: 120GFLOPs GPU, Wifi (2.4G & 5G), Bluetooth 4.3, HDMI@1080p30, 2GB LPDDR3 DRAM, 16GB onboard Flash, RFID Reader, SDCARD expansion slot, USBC expansion port, various I/O for charging controllers and illuminating LED chains.
- Intellivision Amico Controller: Electrical architecture and design. Architecture designed around the ESP32 (Wrover E) module. The controller feature set includes: Bluetooth/BLE, 3.2" multi-touch TFT color display, 64-position pressure sensitive DPAD, action buttons, accelerometer, gyroscope, haptic motor, audio microphone, audio speaker, LiPo battery charging circuit, USBC.
- Manufacturing Line:
 1. Designed several electrical test fixtures for various hardware components.
 2. Architected software test applications and database schema for manufacturing lines.

1998 - Present

Chipcraft Corp (owner/engineer) www.chipcraft.com

General Electrical Engineering design services, including ASIC, FPGA and Board level architecture and design, PCB layout, firmware and software architecture and design, mechanical design.

- ASIC & FPGA architecture and design:
 1. Various FPGA Designs (Xilinx, Altera, Verilog, VHDL): 60X, AMBA (Master and Slave), DDR3, USB 3.0, NIOS II, MicroBlaze, PCI, SCSI, imaging DSP, Sorter Machine Vision, Cockpit Machine Vision, Optical Mark Recognition, SPI, I2C, GPIO using Xilinx and Altera toolsets. Additional tools include: ModelSim, simplify pro, Verilog XL, NCverilog, Debussy, Timing Designer.
 2. Various ASIC (block and complete chip) designs including PCI, SCSI, GPIO and other applications.
 3. SCSI Expander core: Designed SPI-3, Ultra-160, multi-mode expander.
 4. ASIC and FPGA trouble shooting. Reviewed and fixed lots of Verilog and VHDL code written by the "other" guy ☺.
- Board level system architecture and design:
 1. Performed hardware design and PCB layout of various boards for clients, including: Multi-Touch touch sensor for up to 80" display panel, 400dpi duplex image scanner, Sorter Machine Vision, XGMII, XAUI (10Gb Ethernet), USB, UTMI,

XENPAK, U320 SCSI, Fibre Channel, ATA, Serial ATA, PCI, ISA, Power Supplies, SPI, I2C.

2. Developed firmware and functional test applications (single and multithreaded) for various hardware designs in C/C++.
3. Designed various ASIC prototype / development boards.
4. Performed various FPGA porting from one Xilinx family to another.

2005 - Present

Horntones (owner/engineer) www.horntones.com

Created the world's first MP3 enabled Bicycle Horn "Biketones".

- Mechanical Design
 1. Performed water resistant mechanical design of Biketones Enclosure using AutoCAD Inventor.
 2. Implemented sound function using COT MP3 sound board.

Created the FX-550, the world's first MP3 enabled vehicle horn. Performed virtually every task from concept, patent and design through production in China.

- Architecture and design:
 1. Invented and patented the basic concept of an MP3 Enabled Vehicle Horn.
- Board level design:
 1. Design and layout of Head Unit board utilizing OrCad and Pads PCB toolsets.
 2. Developed manufacture programming and test procedures for china production.
- Firmware design:
 1. Wrote design specification for firmware development.
 2. Co-authored firmware.
- Web Design:
 1. Wrote design specification for website development.
 2. Authored entire website utilizing html, php, mysql, flash and actionscript (www.horntones.com).
- Artwork Design:
 1. Co-authored Horntones logo using adobe Illustrator.
 2. Authored all graphic material including brochures, sell-sheets, tradeshow banners and vehicle wrap using adobe Illustrator and Photoshop.

2002 - 2005

Bongosoft Corporation (owner/engineer)

Software Architecture / Design:

- Bongosoft AnitSpam 2004 (BAS)
 1. Architected and patented all algorithms used by BAS.
 2. Although my true passion is hardware development, I had a wonderful time writing several of BAS's core logic / algorithms in C/C++.
 3. Wrote Installshield MSI installer for Bongosoft AntiSpam.
 4. Wrote complete context sensitive html help in both "web help" and "Compiled html" (chm) formats using roboHelp.
- Web site design (bongosoft.com and chipcraft.com)
 1. Wrote chipcraft.com and bongosoft.com websites using only a text editor (and fireworks for graphics).
 2. Have working knowledge of php and mySql.

1995 - 1998

Adaptec Inc: Engineering Manager / Senior ASIC Design Engineer

- Hired and managed a 6 person ASIC Design Team.
- Lead Architect on 64-bit, 66Mhz PCI / Ultra-3 SCSI ASIC design.
- Retrofitted SCSI ASIC with PCI Power Management (Verilog / Synopsys).
- Active member of the PCI Power Management working group.

- Participated in the definition of a new serial protocol.
- Designed PnP ISA EIDE ASIC. (Schematic / Verilog)
- Patent Granted: (#5,793,236) Dual Edge D Flip Flop
- Patent Granted: (#6,058,436) Ultra-3 SCSI Quick Arbitrate and Select (QAS) Protocol
- Patent Applications Filed:
 1. Ultra-3 SCSI Broadcast Command Packet Protocol

1992 -1995

Future Domain Corp: Design Engineer

- PnP (ISA) SCSI ASIC & Board Design
 1. Designed the host interface (PnP ISA) portion of chip.
 2. Designed the board products which use the chip.
 3. Wrote diagnostic and "manufacturing test" software for the chip / boards (C++).
 4. Coded "end user" configuration utility to program the chip's power up defaults (Assembly / C++).
 5. Wrote Technical References and User Guides for the chip and board products respectively.
- Responsible for SCSI board designs. PCI / EISA / ISA / MCA
- Debugged and provided solutions for various board and chip products.
- Managed "Document Control".
- Patent Granted: (#5434516) Automatic SCSI Termination Circuit

EDUCATION:

1991 - 1992

California State University Fullerton

Master of Science in Electrical Engineering with emphasis in Computer Engineering, June 1992 (G.P.A. = 3.75).

1987 - 1991

California State University Fullerton

Bachelor of Science in Electrical Engineering, Jan 1991 (G.P.A = 3.31).

1982 - 1984

Saddleback Community College, Mission Viejo

General Education with emphasis in electronics.

SPECIAL SKILLS:

App Development

Currently working on stock market prediction algorithms using C#.

Computer Aided Design Software

Verilog Simulators (XL, NC, Modelsim, Finsim & VeriBest),
Debussy, SignalScan, Xilinx ISE, Synplify pro, Synopsys, OrCAD,
Concept, AutoCAD, AutoCAD Inventor, Pads PowerPCB, Cam350 ,
Timing Designer, SynapiCAD.

Other Software

Adobe Photoshop, Adobe Illustrator, Adobe Premier Pro / Encore,
Microsoft Office, Adobe Flash, Adobe Dreamweaver, Adobe
Fireworks, Visio, UltraEdit, Quickbooks.

Platforms

Windows 7/XP/2000/NT/98, DOS, Linux, Unix

Programming Languages

ASSEMBLY for x86 Processors
C#, C/C++, MFC, HTML, Perl, PHP, MySQL, ActionScript

Microcontrollers

Atmel AVR, PowerPC, Microchip.

HOBBIES:

Inventing
Surfing
Snowboarding

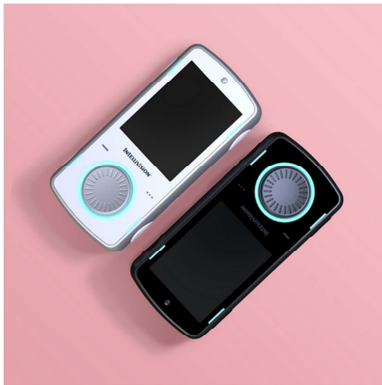
- REFERENCES AVAILABLE UPON REQUEST -

Project: Intellivision AMICO Video Game Console

Industry: Video Games

Utilized Skillset (my portion): Hardware Architecture (100%), Board Design / 5 PCBAs (100%), Firmware Design (5%), Manufacturing Architecture (100%).

Technologies: Cellphone chipset architecture, Bluetooth (2.4G) / Wifi (2.4G/5G) RF, HDMI, USB-C, LCD Display, Capacitive Multi-touch sensor, Audio, Accelerometer, Gyroscope, Haptics, LiPo Battery management.



Feature-rich Controllers

The Amico controller is designed for functionality and simplicity — with a familiar touchscreen, disc, and motion controls, anyone can join in on the fun.



Wireless Automatic Charging

Simply place the controllers in the console and Amico takes care of the charging. This feature also doubles as a simple way of storing the controllers to keep things tidy.



Immersive LED Lighting

Amico uses unique lighting that not only makes for a fun and memorable gaming experience, but also helps guide players in an interactive way.

Project: Biketones By Horntones, Worlds first MP3 enabled bicycle horn

Industry: Bicycle Accessories

Utilized Skillset (my portion): Mechanical Design (100%), Assembly, test and QA procedures (100%). Packaging, Marketing and Sales Materials (100%)

Technologies: Injection Molding, AutoCAD Inventor.

HORNTONES

GIVE YOUR RIDE A VOICE!



Batteries Included

Three replaceable LR1130 coin batteries included.

BIKETONES





is the first and only MP3 powered Bicycle Horn.

The Next Generation of Bicycle Horns

Say goodbye to boring bells and antiquated clown horns. Bicycle horns have just entered a new era with the introduction of Biketones, the world's first and only MP3 bicycle horns.

Biketones are designed with state of the art audio technology. The speaker's molybdenum magnet and its precise wound voice coil enables it to produce sounds up to 80db at 50cm. That's loud!!!

Biketones are available in many different colors, sounding many different fixed MP3 clips. The horn audio ranges from the familiar minions siren "Bee Doo, Bee Doo, Bee Doo" to the Dixie horn. Visit www.horntones.com/biketones.html to see and hear all Biketones.

	Model BT-001	Yellow Bee Doo Minion Siren	MSRP: \$19.95 USD
	Model BT-003	Black Move Get out da way!	MSRP: \$19.95 USD
	Model BT-005	Red Charge Super Chicken	MSRP: \$19.95 USD
	Model BT-006	Orange Dixie General Lee Horn	MSRP: \$19.95 USD
	Model BT-007	Blue Meep Meep Classic Road Runner	MSRP: \$19.95 USD
	Model BT-008	Green Good Bad Ugly Clint Eastwood's Favorite	MSRP: \$19.95 USD
	Model BT-009	Pink Excuse Me Great for young girls	MSRP: \$19.95 USD

HORNTONES
PO BOX 73996, SAN CLEMENTE, CA, 92673, 702-703-4676 WWW.HORNTONES.COM

Project: Horntones FX-550, Worlds first MP3 enabled vehicle horn

Industry: Automotive Aftermarket

Utilized Skillset (my portion): MPU based Architecture (100%), Board Design (100%), PCB Design (100%), Firmware Design (40%), Software/web Design (100%).

Technologies: MP3 Audio playback, USB OTG, Flash Memory, LCD Panel, Button I/O, Web Based tone compiler.



HORNTONES

GIVE YOUR RIDE A VOICE!

THE HORNTONES FX-550

is the first mobile audio system that allows you to customize the sound of your vehicle horn function using any MP3 audio file.

The FX-550 Player has 256 mega-bytes of flash memory to store hundreds of Tones and features a blue LCD display and has 9 preset buttons. Each button can play a different Tone for the selected Theme. The FX-550 also has 2 negative trigger inputs for interfacing with other compatible devices.

The FX-550 is "Plug and Play" out of the box and is factory programmed with 27 Tones, wrapped into three Themes. You can add additional Tones from our online library of Tones (horntones.com) or you can create your own Tones using any MP3 audio editing software. New Tones are transported from your computer to the FX-550 Player using a standard USB thumb drive. You never need to remove the player from your vehicle.

www.horntones.com



Firefox

Horntones Virtual Player

www.horntones.com/myhorntones.html

Most Visited Facebook Digikey Octopart - Electronic P... T-Street - Surf Report ... Mouser Electronics - EL... Pandora Internet Radio

HOME PRODUCTS TONES SUPPORT STORE ABOUT MY HORNTONES VIRTUAL PLAYER Give Your Ride a Voice!

Welcome Mike to the Horntones Virtual Player. Here you can setup your FX-550 with new Tones and Themes.

MY HORNTONES VIRTUAL PLAYER

User: mike@chipcraft.com

Credits: 58

Button 1: CS: In The Money
 Button 2: CS: Miss That Putt
 Button 3: CS: Before Electrici
 Button 4: CS: Everyone laid
 Button 5: CS: Cannon Ball
 Button 6: CS: Harsh
 Button 7: CS: Poontanq
 Button 8: CS: Step on a duck
 Button 9: CS: Salami to hide
 NTRIG 1: Kaluqa Horn
 NTRIG 2: Kaluqa Horn

FX 550

Player: AUTOZONE

Theme: CADDYSHK

Button 3: CS: Before Electrici

NTRIG 1

NTRIG 2

Save NTRIG1, NTRIG2

Status: Ready.

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Project: Scantron Clarity Scanner

Industry: Education / Banking

Utilized Skillset (my portion): CPU based Architecture (90%), Motherboard Design (100%), FPGA Design (100%), Firmware Design (10%), Software Design (50%).

Technologies: 400dpi duplex Contact Image Sensors, Analog to Digital Conversion, Image DSP, DC motor control, Stepper motor control, USB interface, LCD Panel, Button I/O, Web Based Firmware update function, Web Based FPGA update function, Sensor Calibration Routines.



Project: Touchtable TT-32 Multi-touch Touchscreen

Industry: Military / Commercial

Utilized Skillset (my portion): MCU Based Architecture (90%), Motherboard Design (100%), FPGA Design (100%), PCB Layout (100%), Firmware Design (90%), Software Design (50%).

Technologies: IR Camera Sensors, Analog to Digital Conversion, Image DSP, Multi-Touch touch-point detection and positional calculations, USB interface, Button I/O, Sensor Calibration Routines.



Project: Tialinx Eagle 5 (Switching Power Supply with Lithium Poly Charger)

Industry: Military

Utilized Skillset (my portion): Circuit Design (100%), PCB Layout (100%), Manufacturing / Test (100% / small quantities)

Technologies: Lithium Poly Charging Circuit, Switching Power Supplies, DC/DC converters. General I/O.



Eagle5-P

Project: Tialinx Eagle 45-P (USB Keyboard)

Industry: Military

Utilized Skillset (my portion): MCU Based Architecture (60%), Circuit Design (100%), PCB Layout (100%), Manufacturing / Test (100% / small quantities)

Technologies: MCU based Keyboard, Simple HID windows Driver, General I/O.



Eagle45-W Sensor