

Vintage Computer Festival

Saturday, August 5, 2017

Photos by Dave Jaffe

Vintage Computer

Festival West **XII**



**Program
Guide**

Vintage Computer Federation

Vintage Computer Federation Inc. (vcfed.org) is a 501(c)3 non-profit organization for and by computer history enthusiasts. We evolved in 2015 from the DNA of related groups.

In addition to Vintage Computer Festival West, we also own VCF East (New Jersey each spring) and VCF Pacific-Northwest, and we are working hard on creating more events.

We're big fans of online collaboration.

We own Vintage Computer Forum, which is the hobby's largest discussion site. There are thousands of users worldwide to help you with whatever niche of vintage computing you prefer.

We also support in-person meetups through regional chapters. Our founding chapter in the U.S. Mid-Atlantic region has its own hands-on computer museum! We are actively incubating new chapters and partnering with existing local groups to join the Federation.



Hello, world!

Welcome to the Vintage Computer Festival West XII. You're about to embark on a fantastic family-friendly adventure backward in time.

You will see and touch dozens of historic computers from many decades gone – everything from big iron to eight-biters. You'll also experience some creative new replicas, modern enhancements, and new retrothemed systems. You will meet some historic people, learn their insider stories, and perhaps pick up our nerdily awesome t-shirt! While you're here, remember to tour the amazing museum all around us: they're a terrific host and worth a return trip. Be sure to talk about us online: #vcfwest

Happy computing,

- The Vintage Computer Federation

Speaker Schedule

Saturday

9:00

Welcome / Show opens

State of the CHM - *Dag Spicer*

11:00 - 12:00

IBM 1401 Demo at the CHM

11:30 - 12:30

Early Apple - *Bruce Damer, Paul Laughton*

Bruce and Paul will discuss some early Apple artifacts and Paul's experience working with the Apple founders on early projects with the company.

1:00 - 2:00

Medium Iron Restoration Panel - *Lyle Bickley, Ken Sumrall, Joe Fredrick, Carl Claunch, Ed Thelen, Robert Garner, Pad Buder, Marc Verdell*

Moderated by Michael Cheponis

A discussion of the trials and tribulations of restoring medium iron in a museum environment.

2:30 - 3:30

Resurrecting Habitat, the First Graphical MMO - *Chip Morningstar, F. Randall Farmer*

Nehabitation is a relaunch of the first massively multiplayer online roleplaying game, Lucasfilm's Habitat. Originally developed in 1985 by Lucasfilm Games (now LucasArts) for the Commodore 64, Habitat is considered the grandfather of modern MMORPGs.

2:30 - 3:15 and 3:15 - 4:00

PDP-1 Demo at the CHM

3:30 - 5:30

Commodore Recollections - *Bill Herz, Chuck Peddle, Leonard Tramiel, Yash Terakura*

Moderated by Earl Evans

These early Commodore pioneers will discuss the history of Commodore over the early eras along with anecdotes and intrigue.

6:00

Show closes

Sunday

9:00

Show opens

9:30 - 10:30

Class: My First Experience Using KiCad - *Dwight Elvey, DFT Engineer*
Making the diagnostic board and 6530 to 6532 adapter for the KIM-1.

11:00 - 12:00

IBM 1401 Demo at the CHM

12:30 - 1:30

Xerox Alto Restoration Panel - *Ken Shirriff, Carl Claunch, Luca Severini*
Moderated by Marc Verdell
The story of restoring Xerox Alto systems to full functionality.

1:00

Exhibit Judging Begins
Judges: Daniel Kottke, Mitch Waite, Chris Garcia



The role of events like VCF in the ecosystem of retro-technology enthusiasts can't be overstated. They are gathering places for enthusiasts, each with a different desire in their interactions. There is value in both strict preservation and direct access to retro-technology, and understanding how they can interact, to further both long-term preservation and interactive recovery of the context of use. Such collaborations can only help to illuminate the history of computers for everyone.

CHRIS GARCIA

CURATOR, COMPUTER HISTORY MUSEUM

1:30 - 2:30

Xerox Alto PARC Panel - *John Shooh, Dick Lyon, Geoff Thompson, Dan Swinehart*
Moderated by Hansen Hsu, CHM Curator, Center for Software History
Xerox PARC alums will discuss their experience with the Alto and other projects.

2:30 - 3:15 and 3:15 - 4:00

PDP-1 Demo at the CHM

3:30 - 4:30

Class: Before You Turn it On: Initial System Debugging - *Lyle Bickley*
The tools you need and when to use them. Which systems are easy or difficult? How is restoration different for micros and minicomputers?

4:30 - 5:30

Awards

5:30

Show closes

Exhibitors

VCF exhibitors put amazing effort into displaying their favorite historic computing systems. Be sure to visit them all, ask questions, play, learn, Tweet, and take lots of pictures! Perhaps you'll be inspired to exhibit your own pride-and-joy at VCF West XIII next year.

Lester Barrows - Current state of the art in Apple II

Current hardware and software projects which bring new life to old hardware.

Simon Wynn - Newbear 77-68

Fully restored and functional Newbear 77-68 6800 based system, one of the earliest home computers available in the UK.

Tom Conrad - Playing Adventure on IBM 5150

Play the original Crowther and Woods Colossal Cave Adventure as ported to the IBM PC.

Bradley Grantham - New hardware and obsolete software

A demonstration of two computers built to run old software.

Eric Schlaepfer - The MOnSter 6502

The MOnSter 6502 is the world's

largest 6502 microprocessor, built from individual transistors to be an exact replica of the renowned 6502 microprocessor chip.

Cole Erskine - The First Practical Chess Computers

On exhibit will be Applied Concepts' Boris, the original Fidelity Chess Challenger, and a Synertek SYM-1 running Peter Jennings's MicroChess.

Kevin Lund - Classic Atari Computers presented by the San Lenadro Computer Club

First and second-generation Atari 8-bit Personal Computers including interesting and rare peripherals.

Tony Cole - Cray SuperComputer

Various components from Cray computers including Cray-1, Cray-2, Cray X-MP SuperComputer Boards.

The MADE - Home Computer Games!

An exhibit of various home computer games.

Michael Hill - Vintage Toys & Noise

A selection of audio/visual gadgetry used with vintage computers, including an interactive exhibit using Commodore, Apple, and other machines interfaced with some modern hardware to create sound and visual effects.

Bill Borsari - The Amazing Commodore Amiga 2000

This display will feature several radically different Amiga 2000 models to see and use.

Bill Borsari - Retro Battle Royale: Amiga vs Atari

Relive the epic 80's home computer

battle between Amiga and Atari. Players will earn tokens to vote for their favorite systems and at the end of the VCF we will declare a winner.

Lyle Bickley and Bob Rosenbloom - Tek Graphics and Apple LISA

A display of Tektronix Graphics including a plotter and an Apple LISA computer system running original software.

Cameron Kaiser - The Apple Network Server

A running ANS 500 for interaction with participants, as well as a prototype Shiner, which was the codename during development.

(Continued...)



Recent years have seen the passing of some of the most influential people in our industry: Jack Tramiel, Steve Jobs, Dennis Ritchie to name but a few. As these giants recede into the past we are challenged with preserving our digital heritage in the form of the visions that these pioneers shared with the world. I strongly recommend that everyone, especially families and the younger folk who will be inheriting this wealth of technology, take a trip to the Vintage Computer Festival and experience just a bit of the founding of our technologic age.

BIL HEARD
CREATOR OF THE COMMODORE 128

Exhibitors, continued...

Dave Babcock, Steve Casner & team - The IBM 1620 Jr.

The goal of the CHM-sponsored, IBM 1620 Jr. project is to produce an operational version of the IBM 1620 Model 1 Level F computer that recreates, as much as possible, the experience of operating a real IBM 1620.

Duncan Mac Dougall - Rare Computers from Japan

This exhibit aims to show off some of the more popular examples of systems that the West missed out on, such as the PC-98, PC-88, X68000 and MSX2+.

Jeff Albrecht - Boot bytes for notes

A collection of S-100 based computers, most with front panels, playing music and demonstrating other aspects of the state of the art from that era.

Dwight Elvey - How to diagnose and Repair a broken KIM-1

An in depth look at diagnostics and interventions for the seminal KIM-1 single board computer.

Carl Claunch - Xerox Alto

A demonstration of the innovations and concepts built into the Alto, such as the creation of ethernet, widespread use of client-server systems, WYSIWYG applications, bit mapped high-resolution displays, laser printers, and the predecessors of Word, Draw, Postscript and many other software products from the 1980s.

Larry Pezzolo - From MIKE 3 to Ferguson Big Board

An exhibit focusing on two very

early computer systems, the MIKE 3 and the Ferguson Big Board.

David Henderson - Wild Micros at the I/O Corral

A demonstration of the I/O skills of various breeds of microcomputers from Britain, Europe, America and the Former Soviet Union.

Stephen Jones - SDF Public Access UNIX System

A demonstration of a previous incarnation of a BBS running on an AT&T 3B2/500 computer along with a Teletype 5620 and an AT&T 605 terminal.

Jeff Kaylin - Multics

Terminal access to Multics on a DPS-8/M emulator running against a Honeywell 6180 Maintenance panel.

Michael Holley - Southwest Technical Products Corp.

A display of Southwest Technical Products items including early audio and test equipment, a nixie tube clock, a computer with floppy disk and terminal.

Foone Touring - Floppy Disks

A display of everyone's favorite digital storage medium in all its many formats including a Copy That Floppy station.

Hap Plain - The Proto Preserve

Everything Prototype - a variety of prototype Apple systems.

CHM Volunteers - Computer History Museum

The Computer History Museum will be showing off their involvement in computer history.







Newbear Computing Store 77-68



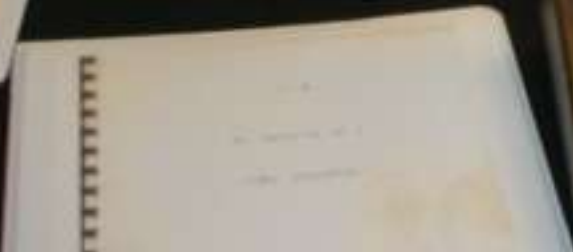
Newbear 77-68

Newbear Computing Store

Designed by Bob Mendenhall Systems
Over 1000's of hours of programming with 2.0000



MS100
MICROCOMPUTER
System Design Guide



Year 77-68

Computer Store

Computer Store



FLEX



FILE

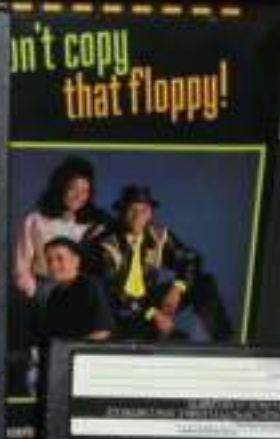


Bernoulli Box I

Image

1987 20 MB

Named for the Bernoulli Effect which is used to prevent head crashes, these disks had incredible capacity for the time



5 1/4" Floppy Disk

1981 5.25 MB

Used as a beta for copy protection aimed to prevent it from being copied. Originally a beta format for testing programs

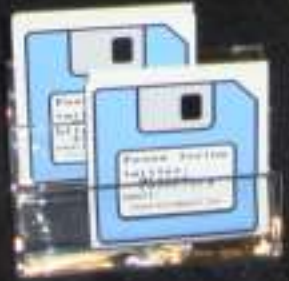


Bernoulli Box II

Image

1987 10 MB

Uses the same technology as the original Bernoulli Box, but in smaller disks with higher density



3250 Zip Disk

Image

1991 3250 MB

After the "click of death" lawsuit, this version was released with titanium-infused self-cleaning media



Zip Disk

Image

The most popular the "superdisk" format. A "4 disk" often refers to the 100 MB version for Amstrad

OFFICIAL COMPUTER
PIRATE

don't copy
that floppy!



IBM

8" Floppy

IBM

1971

Designed as
disc, the vin
as added t
n dust. C
d-only f
ding pr

INTERNATIONAL TECHNOLOGY
HIGH CAPACITY FLEXIBLE DISK CARTRIDGE
5 1/4 INCH 20 MEGABYTE
PART #
MODEL #

YES



8" Floppy Disk

IBM

1971 341-0100

Designed as a bare disc, the vinyl covering was added to protect it from dust. Originally a read-only format for loading programs

5.25" Floppy Disk

1976

These 5" disks were used primarily by the personal computer, as well as minis for a variety of other OS systems.

3.5" Floppy Disk

1982

A competing format to the standard 5.25" disk, it only ever really took off in Asia. This is a 3.5" disk.

Bernaulli Box II

1982

the same technology as the original Bernaulli Box, but smaller disks for higher density

U250 Zip Disk

1993

After the "click of death" lawsuit, this version was released with titanium-infused self-cleaning media.

Zip Disk

1994

The most popular of the "superfloppy" formats. A "click of death" affected the drives in the late 90s, leading to drives destroying themselves.

click! / PocketZip

1995

Designed for laptops, cameras, and mp3 players, this format had the bad luck to be released right before the "click of death" lawsuit

Olivetti Minidisk

1977

Data is stored in single spiral, rather than tracks like other formats. Used in the minicomputer era.

3" Compact Floppy

Hitachi/Matsushita/Maxell
1982 300kb

These 3" disks were used primarily by the Amstrad CPC/PCW, as well as add-ons for a variety of other UK micros



Flex Diskette

Dysan
1984 1mb

A competing format to the standard 3.5" disk, it only ever got used in a rare luggable PC: The Seequa Chameleon 325



DataDisk

Smith Corona
1986 100k

Used in Smith Corona's Personal Word Processors, and based on the 3" Mitsumi Quick Disk format.



click! / PocketZip

omega
1999 40mb

Designed for laptops, cameras, and mp3 players, this format had the bad luck to be released right before the "click of death"

Olivetti Minidisc

Olivetti
1977 3kb

Data is stored in a single spiral, rather than tracks/sectors like other floppies. Used in the P6040 minicomputer

Brother Micro

Brother
1984 300

Used by industrial stitching/sewing embroidery machines

Zip Disk

omega
100mb

popular of "floppy" "click of death"



3" Compact Floppy

Hitachi/Matsushita/Maxel
1982 360kb

These 3" disks were used primarily by the Amstrad CPC/PCW, as well as add-ons for a variety of other UK micros



Flex Diskette

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DataDisk

Smith Corona
1986 100k

Used in Smith Corona's Personal Word Processors, and based on the 3" Mitsumi Quick Disk format

By Dysan
3 1/2" FlexDiskette



Flex Diskette

Dysan

1984

1mb

A competing format to the standard 3.5" disk, it only ever got used in a rare luggable PC: The Seequa Chameleon 325



DataDisk

Smith Corona

1986

100k

Used in Smith Corona's Personal Word Processors, and based on the 3" Mitsumi Quick Disk format



it! / UHD144

Caleb

1989

144mb

A floptical format, with drives backwards compatible with standard 3.5" disks. Supposedly the cheapest media of the superfloppies



HFD

Sony

1995

200mb

Fujifim produced the disks. Originally launched in 1996 at 150mb, it was recalled after drive problems and relaunched in 1999

Flex Diskette

Dynan

1984 1mb

A competing format to the standard 3.5" disk, it only ever got used in a rare luggable PC: The Seequaameleon 325



DataDisk

Smith Corona

1988 100k

Used in Smith Corona's Personal Word Processors, and based on the 3" Micro Floppy Disk format



IT / UHD144

Casab

1998 1400k

A floptical format, with drives backwards compatible with standard 3.5" disks. Supposedly the cheapest media of the superfloppies



Olivetti Minidisc

Olivetti

1977 3kb

Data is stored in a single spiral, rather than tracks/sectors like other floppies. Used in the P6040 minicomputer

Brother Micro Disc

Brother

1984 3000 patterns

Used by industrial stitching/sewing/embroidery machines

LT-1

Fujifilm

1989 793kb

These 2" disks were solely used in the Zenith Minisport laptop.

Stringy Wa

Ex

1978

A continuous system designed as an inexpensive replacement for floppy disks.

DataDisk

Smith Corona
1100K

Smith
Personal
scissors, and
the 3"
brick Disk

itf / UHD144

1988
144mb

Called
144mb

A optical format, with
drives backwards
compatible with
standard 3.5" disks.
Supposedly the
cheapest media of the
superfloppies

HFD

1989
150mb

Sony

Fujifilm produced the
disks. Originally
launched in 1988 at
150mb, it was recalled
after drive problems
and relaunched in
1989

SuperDisk

1989

Imaging




LT-1

LT-1

Fujifilm

1989
793kb

These 2" disks were
solely used in the
Zenith Minisport
laptop.



**Stringy Floppy
Wafer**

1978
4k-64k

Exatron

A continuous tape
system designed as an
inexpensive
replacement for floppy
disks. Not actually a
floppy disk!

Famicom Disk Card

1986
112kb

Nintendo

Later Famicom Disk
System disks came
with a shutter
covering up the media,
to keep out dust

1986 Sony 30 frames
 An analog format that uses NTSC/PAL encoded frames, first used in the RC-2000 video camera



SuperDisk

1997 Imation 120mb

A floptical format, with disks produced by Matsushita. Drives are backwards compatible with standard 3.5" disks



Floptical

1991 Insite 21mb

Floptical drives use a standard magnetic read/write head but use laser positioning and a red LED for precision



3.5" Extended Density

1991 ED 1.44mb

ED 1.44mb

3.5" High Density

1984 DD 720kb



floppy!



Presented by the Software Publishers Association

3M

SS.SD.
W.W.P.
Original and
improved versions
of this product

1628 Model search 21-3
Band 1

8" Floppy Disk

IBM

1971

242-303kb

Designed as a bare disc, the vinyl covering was added to protect it from dust. Originally a read-only format for loading programs

3" Compact Floppy

Hitachi/Matsushita/Maxell

1982

360kb

These 3" disks were used primarily by the Amstrad CPC/PCW, as well as add-ons for a variety of other UK micros

sk

Supposedly the
cheapest media of the
superfloppies

drive problems
and relaunched in
1999



Brother Micro Disc

Brother

3000 patterns

1984

Used by industrial
knitting/sewing/
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LT-1

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These 2" disks were
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Stringy Floppy Wafer

Exatron

1978

4k-64k

A continuous tape
system designed as an
inexpensive
replacement for floppy
disks. Not actually a
floppy disk!







Alice 4
2001

First ever 4-way video
First ever 100% 3D graphics
First ever 4-way
Laser and 3D graphics with 4-way video
100% 3D graphics

Performance
100% 3D graphics with 4-way video
Laser and 3D graphics with 4-way video
100% 3D graphics with 4-way video
100% 3D graphics with 4-way video

Contact: 01111 1111 1111



MC 280P 7000
11 7000 1000
1000 1000 1000

1000 1000 1000
1000 1000 1000
1000 1000 1000



Alice 3

2015

- 8-bit custom microcomputer
- Monolithic design
- Z80 CPU
- ARM Cortex M4 for I/O:
 - SD card
 - Keyboard
 - RAM (intercepts Z80 memory bus)
- Parallax Propeller:
 - VGA video (color text)
 - YM2149F audio emulation (3 voices + noise)
 - Generates Z80 clock
- Runs CP/M 2.2

[Ikesteloot.github.io/alice/alice3](https://github.com/ikestelo/alice3)



Die



502 IC Die

MONSTER 5502



Booting Forth
fig-FORTH 1.8
1 2 1 OK
1 2 + . 3 OK

DELL





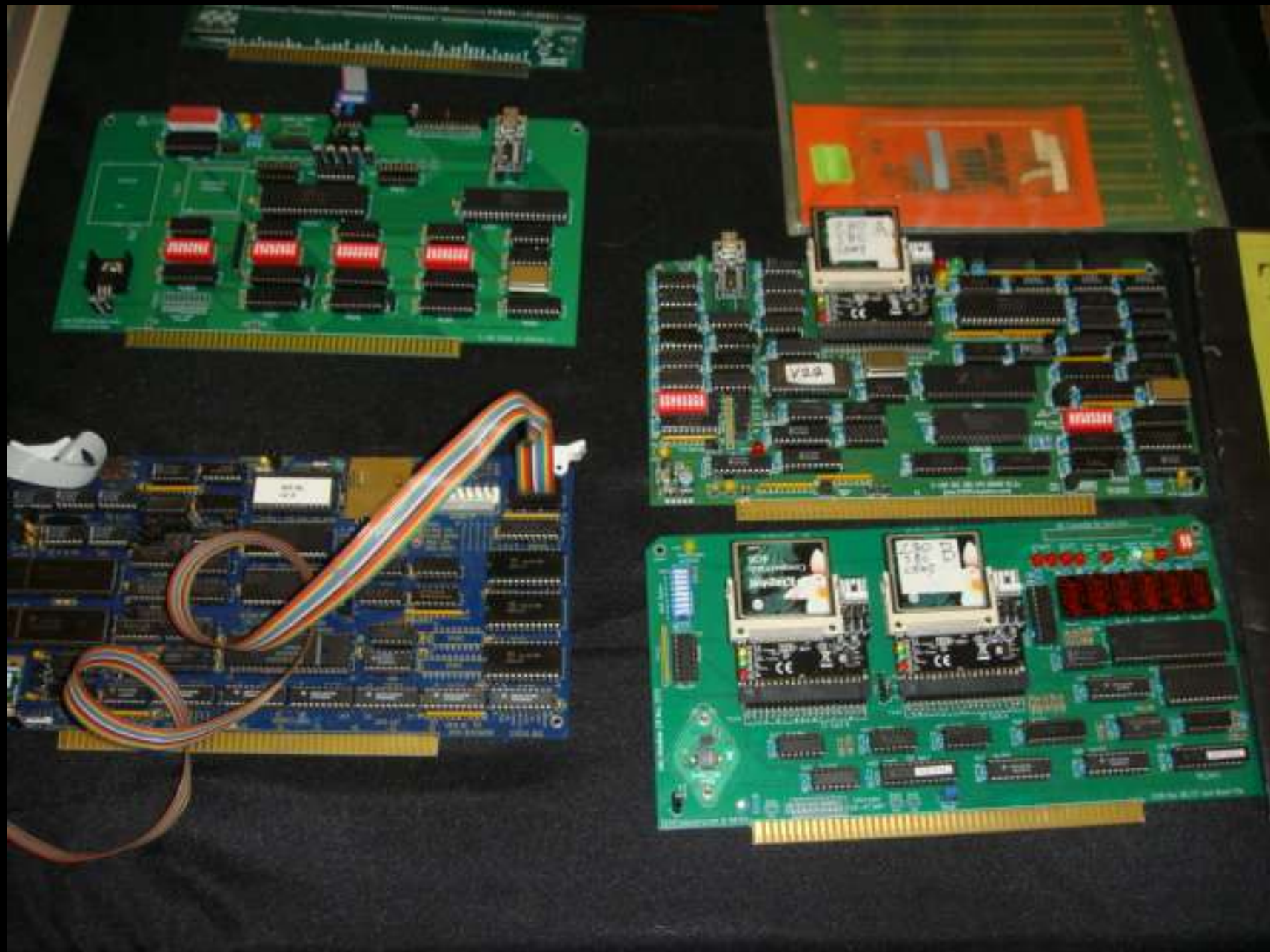








The Bus Probe



Vector
DIGITAL SYSTEMS S.p.A.
0075 MOTHERBOARD
88030P
A 100% COMPATIBLE 3.5" floppy disk controller for the 88030P and 88030P-2. It is a 100% compatible replacement for the 88030P-2.



880 A
SBC
CMV3













Challenge: Convert all the lights and switches to a modern microcontroller solution. Design a ground-level board with PCATX133. Print 100 boards that require only 10 ICs, a Raspberry Pi 3B console. Use the original wiring to connect the lights and switches to the Pi 3 edge connector. (Complex)

Challenge: Emulate the IBM 1622 Solution: Build a miniature replica printed shell with a touch-sensitive to reading, connecting with sound effects.

Computer History Museum

DATA PROCESSING SYSTEM



Now: Use an Arduino Uno 128K flash memory device to restore high speed images

Why: Steve Wozniak (Apple) used software, Steve Jobs (Apple) used hardware, and Steve Jobs (Apple) used hardware. Steve Jobs (Apple) used hardware. Steve Jobs (Apple) used hardware.

Why: Concept developed in 2010, released prior to the release of the Arduino Uno.

Challenge: Some restoration projects require a high speed camera.

Solution: Sourced 128K flash memory device, built custom software to capture high speed images.

Challenge: Original image restoration requires a high speed camera.

Solution: Found a high speed camera capable of capturing high speed images.

Challenge: Capture all the lights and restore to a modern representation.

Solution: Design a custom board with a 128K flash memory device to capture high speed images.

Challenge: Restore the 128K flash memory device to a modern representation.

Solution: Design a custom board with a 128K flash memory device to capture high speed images.

Computer History Museum

The board features a grid of blue LEDs on the left and a row of buttons on the right. It is connected to a laptop on the left and other equipment on the right.



















MARTIN RESEARCH

MARTIN RESEARCH

MIKE III COMPUTER



IBM
PC
150A

Serial # 14135

START
HERE

1. Go to well house
 2. Open door
 3. Get lantern
 4. Get Keys
 5. Go out
- BEGIN YOUR ADVENTURE









Apple II

Apple II

Apple II

Apple II

The Keyboard

- Is VERY FRAGILE
- if you use it PLEASE BE GENTLE
- Is a "Capacitive" keyboard
- Does NOT use switches!

Why is this...
• 128K RAM
• 1.44MB 5.25" floppy disk drive
• 1.44MB 5.25" floppy disk drive
• 1.44MB 5.25" floppy disk drive
• 1.44MB 5.25" floppy disk drive
• 1.44MB 5.25" floppy disk drive
• 1.44MB 5.25" floppy disk drive

Hardware Facts...
• 12" CRT monitor
• 1.44MB 5.25" floppy disk drive
• 1.44MB 5.25" floppy disk drive
• Custom 6502 CPU
• 128K RAM
• 1.44MB 5.25" floppy disk drive
• Keyboard

What is...











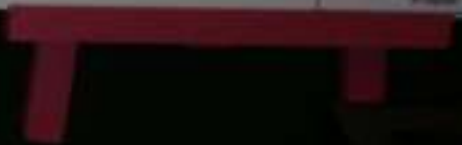




10. ...
...
...

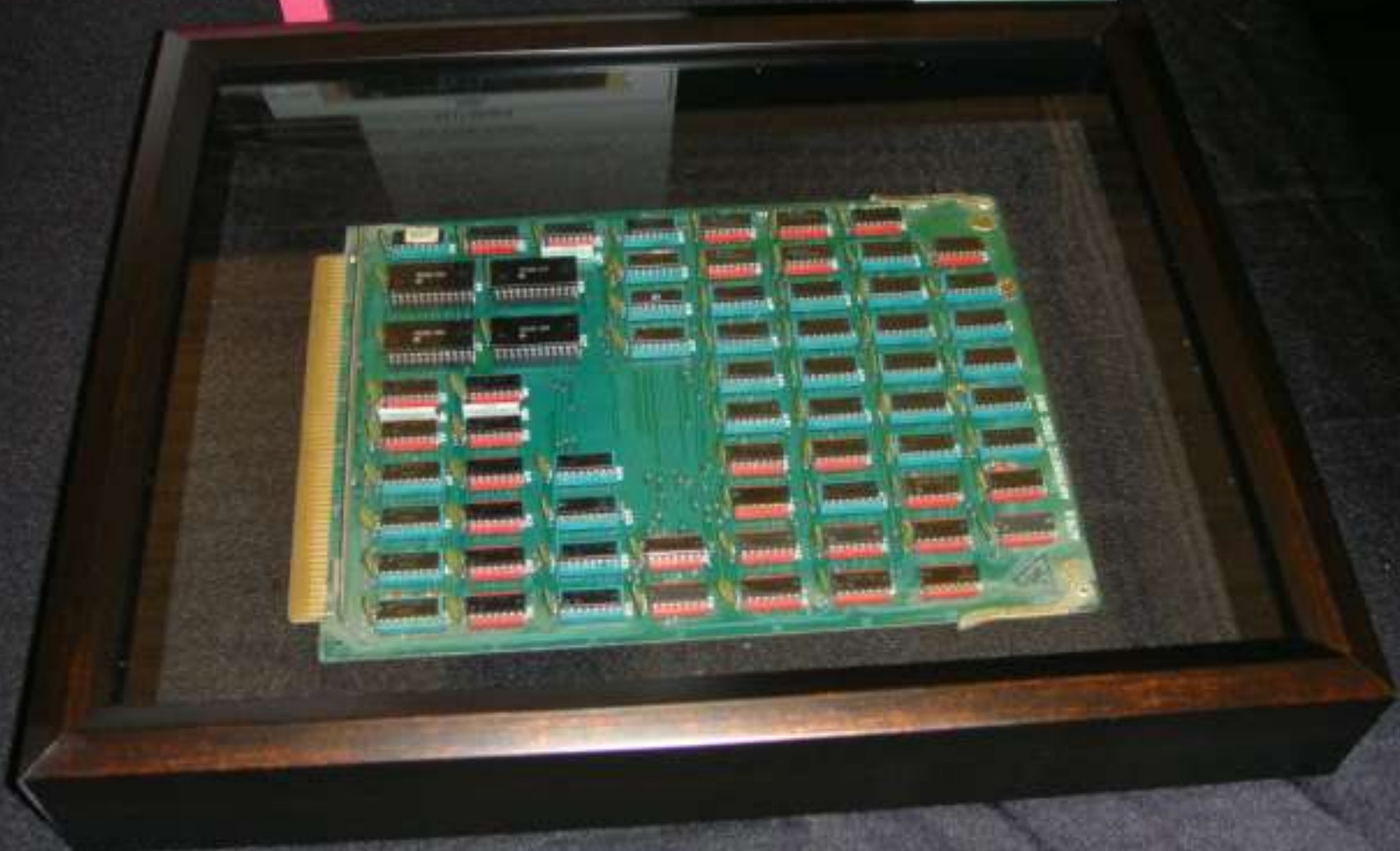


...
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14 18 20 22
11 register 14 pins

Microprocessor 8080-8085
8080-8085
8080-8085

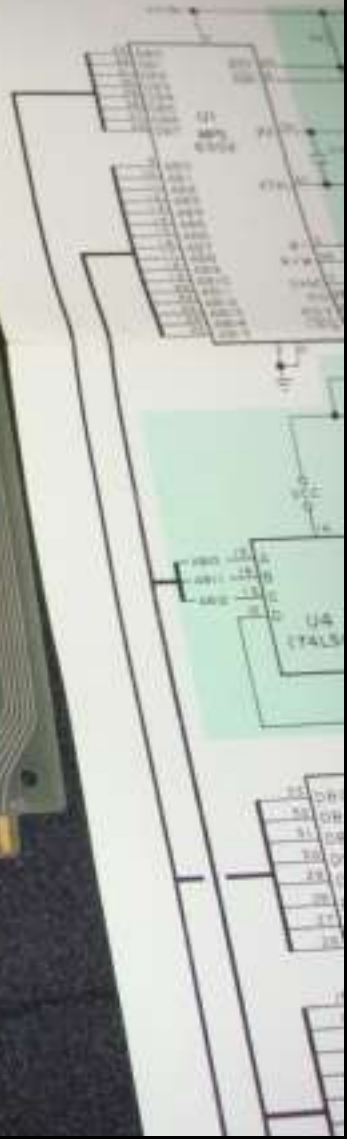






SLCC
San Leandro Computer Club Since 1982
ATARI ATARI ATARI ATARI ATARI ATARI ATARI





What to do if the 6530-002 or 003 has gone bad?
How to diagnose what failed by using code and scope, test light or meter.
What to do if the 6530-002 or 003 has gone bad?







Atari 386SX Personal Home Computer
Requires:
4MB RAM Memory
400psd 8MHz 10MHz (CPU Accelerator)
Atari PS3000 Monitor
Built-in 20MB Single Sided 3.5" Floppy Disk Drive
Only about 1000 units produced
Atari AT314 88380 120K 3.5" Floppy Drive

TERRIBLE
NERD

ATARI



Atari Mega 2 ST Personal Home Computer
2Mb Ram, 720K 5.25 Floppy Drive, Battery back
up real time clock
Atari Mega2e 30 (30Mb) Matching Hard Drive
Detached Keyboard for mouse and joystick
connections
Atari SC1224 Color Monitor (JVC screen)



FRY

The USB System

Drive (C:) View Desktop



DCL 23



Most Important Programs should be installed
with C:\ & Windows & System32 folders should
not be modified. Avoid to install any software
programmatically.
© 2000-2001 Microsoft
All Rights Reserved. MSN, MSN 2 and Messenger are



FRYS.COM



Atari STacy 4 Personal Home Computer
Portable ST Computer - 6 D batteries give about
45 minutes use!
4Mb Ram
Upgrades:
Ultra-Satan dual removable 5D Card HD





MICROPROCESSORS

THE PROGRAMMER'S HANDBOOK







Commodore

PET
8001 Series

personal
computer

Digicomp DR-7
Astrology
Minicomputer

























IMSAI 8080

IMSAI 8080
IMSAI 8080
IMSAI 8080



Apple IIc
\$250





PC

Card

Kit

Designed for use with the Shiner. The system is designed to allow you to store your data on a single card. The Shiner 100 is designed to hold up to 100 cards. The system is designed to allow you to store your data on a single card. The Shiner 100 is designed to hold up to 100 cards. The system is designed to allow you to store your data on a single card. The Shiner 100 is designed to hold up to 100 cards.



Memories of Shiner:

The Shiner 100 is a revolutionary new storage device that allows you to store your data on a single card. The Shiner 100 is designed to hold up to 100 cards. The system is designed to allow you to store your data on a single card. The Shiner 100 is designed to hold up to 100 cards.

The Shiner 100 is a revolutionary new storage device that allows you to store your data on a single card. The Shiner 100 is designed to hold up to 100 cards. The system is designed to allow you to store your data on a single card. The Shiner 100 is designed to hold up to 100 cards.



























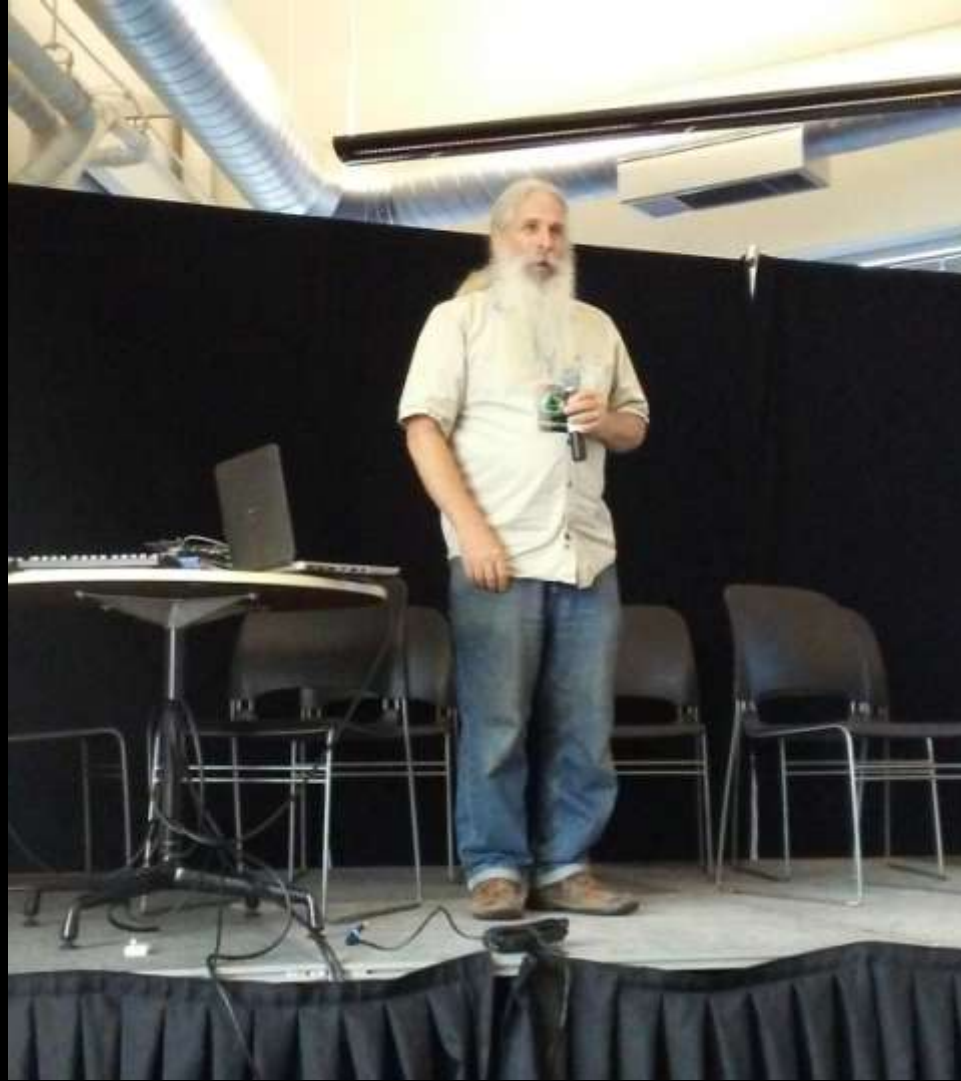


Photo by Kevin Appert
Sunday, August 6, 2017