The Atari 7800 ProSystem

Steve Golson

Portland Retro Gaming Expo
October 22, 2016

Atari Video Game Consoles

1977   Atari VCS   *Stella*

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1982	Atari 5200 SuperSystem	*Pam*

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1984	Atari 7800 ProSystem	*3600*
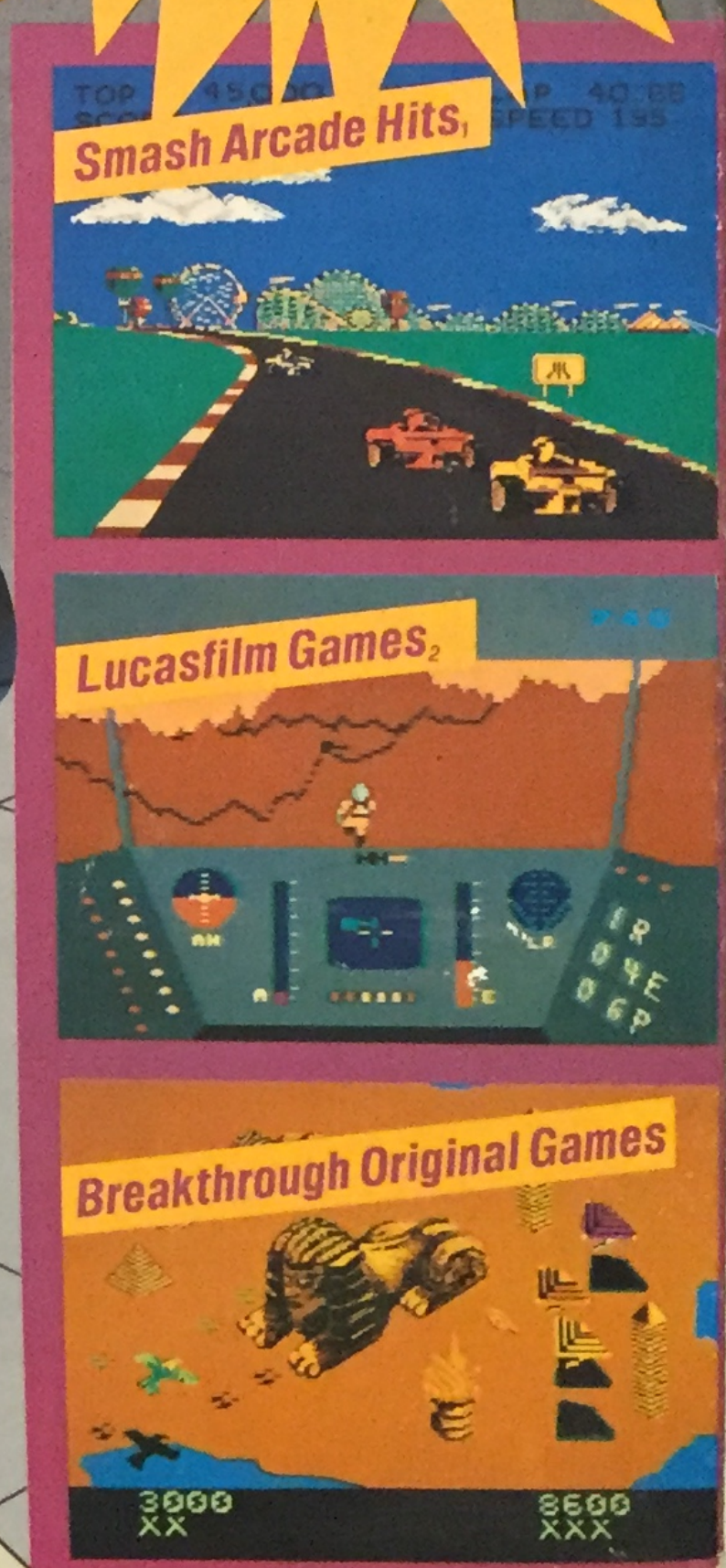
The ATARI 7800 ProSystem
The System that Grows with You.

Advanced ProSystem Graphics

The ATARI 7800 ProSystem features more colors, more motion, more action-packed game sequences and more game playing options than ever before. Games come to life with 256 exciting colors and up to 64 independently moving characters at one time. Shadow graphics create a realistic 3-D effect to pull you right into the fun. You'll see the difference immediately when you plug in the console and play any new ProSystem game. For an idea of the superior performance of this new machine, compare these game screens:

POLE POSITION CLOSE-UP

ATARI 2600   ATARI 7800 ProSystem

In action, the difference is unbelievable! You've never seen home video games this sensational before!

New Pro-Line™ precision game controllers

Designed to fit in the palm of your hand, two ATARI PRO-LINE controllers give you arcade-like control over the action at split-second speeds. These self-centering controllers are engineered for precise game control and extraordinary reliability. A two-button fire option lets you control two independent functions in many ProSystem games, for true-to-arcade response.

And—the Atari 7800 ProSystem is compatible with all Atari 2600 game controllers.

Sleek, high-tech design

Combines function with fun in the clean, compact game console and controllers.

Learning and laughter for preschoolers

The ATARI 7800 ProSystem is fully compatible with all ATARI 2600 VCS children's games and the child-size Kid's Controller. Kids will enjoy interacting with characters from their favorite movies and television shows, while learning colors, numbers and the alphabet and improving hand-eye coordination.

Expandable to a home computer

The ATARI 7800 ProSystem is engineered for expandability. When you're ready, the optional Computer Keyboard turns the ATARI 7800 ProSystem into a home computer. You can learn programming and word processing, play educational games and use other special software programs. The ATARI 7800 ProSystem Computer Keyboard will accept ATARI XL series accessories, such as printers and program recorders, to make a versatile home computer for the entire family.

Atari Service™ where and when you need it!

There are over 1200 ATARI SERVICE CENTERS nationwide to help you keep your ATARI 7800 ProSystem in perfect running condition. And if you're ever in need of technical assistance, we put our expertise on the line! Call our Customer Service number tollfree: 800-538-8543. In California, call 800-672-1404.

Hundreds of games to choose from

Play all your favorite ATARI 2600 VCS games. An exclusive electronic design makes all ATARI 2600 cartridges and controllers compatible with the ATARI 7800 ProSystem—with no expensive, add-on adapter to buy!

Plus—dazzling new ATARI 7800 ProSystem games are available now, so you can build an expanding library of spectacular ProSystem Graphics software. In addition to the games shown on the front of this carton— POLE POSITION II, Lucasfilm's RESCUE ON FRACTALUS™ and DESERT FALCON™—all specially designed for the ATARI 7800 ProSystem—you can choose from these extraordinary ProSystem Graphics games, with many more new titles coming soon:
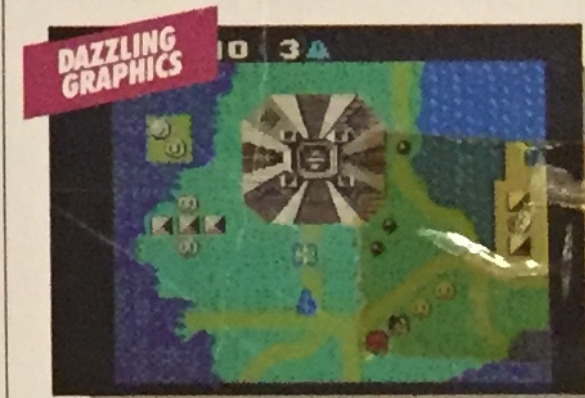
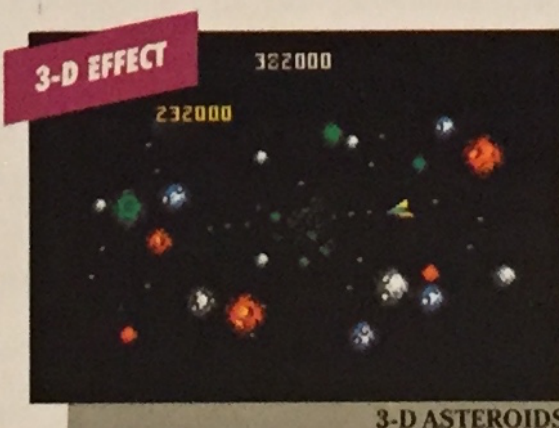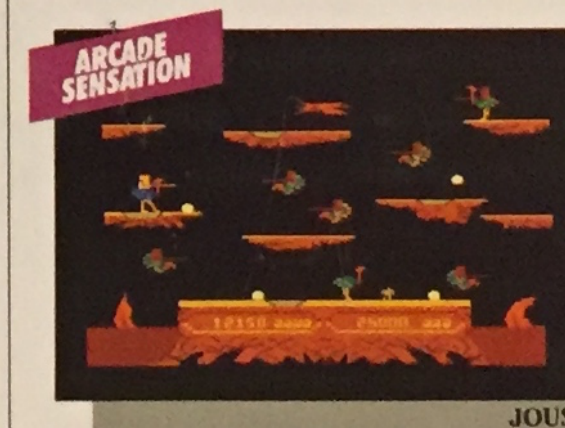Exclusive—Available Only for the 7800 ProSystem

ALL-TIME FAVORITE — MS. PAC-MAN³

WILD FUN — FOOD FIGHT™

CREATE YOUR OWN MAZE — DIG DUG¹

DAZZLING GRAPHICS — XEVIOUS¹

3-D EFFECT — 3-D ASTEROIDS™

ARCADE SENSATION — JOUST⁴

FIRST HOME VERSION — GALAGA³
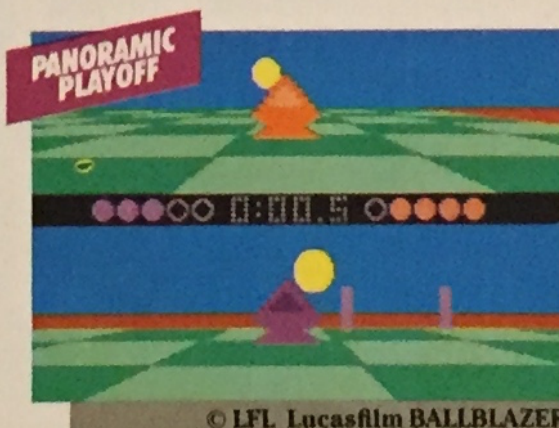
PANORAMIC PLAYOFF — © LFL Lucasfilm BALLBLAZER²

INCREDIBLE ACTION — ROBOTRON: 2084⁴

The Fun is Just Beginning!
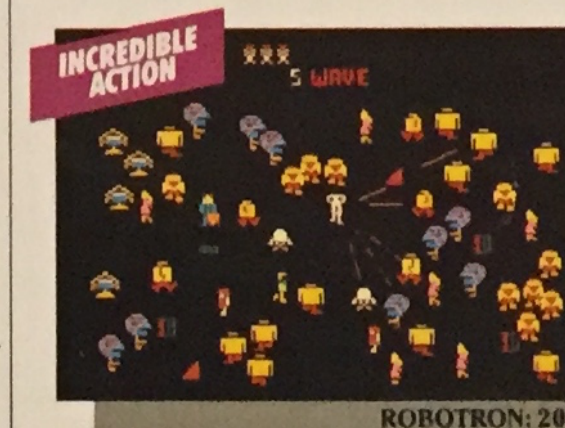
1. Engineered and designed by Namco Ltd., manufactured under license by Atari, Inc. ™ and Namco 1982
2. Trademark of Lucasfilm Ltd. Atari, Inc., Authorized user
3. Trademark of Bally Midway Mfg. Co. sublicensed to Atari, Inc. by Namco-North America, Inc.
4. Trademark and © Williams 1982, manufactured under license from Williams Electronics, Inc.
5. Trademark of United Feature Syndicate, Inc. SNOOPY: © 1965 United Features Syndicate.

ATARI®

Atari Video Game Consoles

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	Atari 2600	
1982	Atari 5200 SuperSystem	*Pam*
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1984	~~Atari~~ 7800 ProSystem **GCC**	*3600*

MIT 1978

Doug Macrae

Kevin Curran

Pinball and video games at MIT dorms

Pioneer

Playboy

Paragon

Fire One

Star Castle

Rip Off

Battlezone

Missile Command

…and more

Speedup Kits

Asteroids

Galaxian

Pac-Man

Missile Command ?

March 1981

General Computer Corp.

Super Missile Attack

enhancement kit for Atari Missile Command

developed March–May 1981, first sale May

total sales ~1,000 units for profit ~$250,000

July: Atari sues GCC for $15M

October: Atari drops lawsuit
          GCC signs Atari development agreement

Crazy Otto

enhancement kit for Midway Pac-Man

developed June–October 1981
(while the Atari lawsuit was ongoing)

October: give demo to Midway
         sign Midway license agreement

Name Changes!

Crazy Otto

Super Pac-Man

Miss Pac-Man

Pac-Woman

Ms. Pac-Man

February 1982

Projects being worked on include:

Fireman	music driver for TI sound chip
Food Fight	
Molecular Magic (Quantum)	character development system

All are coin-op projects…

February 3-4

Ray Kassar
and Manny Gerard
visit GCC

March 4

Manny Gerard
and Skip Paul
visit GCC

Meanwhile…

what's going on at Atari?

In February 1982, when another group of VCS programmers threatened to leave, Kassar panicked. If they quit, Atari would have had no VCS programmers left. "Kassar was desperate. He was running scared," Kaplan says. He responsed by throwing money at the designers. Salaries were increased and a hastily-created bonus plan was instituted.

"What Went Wrong at Atari"
San Jose Mercury News
November 6, 1983

Early April 1982

Kevin gets a phone call

Spring 1982
Work begins on VCS carts

Combat II

Phoenix

Vanguard

Galaxian

Centipede

Rubik's Cube

Ms. Pac-Man

others…

Summary of June 17, 1982 Meeting

Attending: Kevin Curran   John Mracek   Tom Westburg
                 John Tylko   Art Ng   Claudia Newcorn
                 Mark Ackerman   Glenn Parker
                 Tom Calderwood   Dave Payne
                 Bill Hofmann   Chris Rode
                 Patty Goodson   Jim Salem
                 Roy Groth   Keith Sawyer

Kevin Curran opened the meeting by presenting the central tenet of General Computer Corporation: that of looking towards and developing for the future. The goal of these meetings are to provide an open forum for unrefined ideas, suggestions, aspirations, information, etc., in a casual and informal atmosphere. Although the company is product oriented with specific goals in mind and its bottom line is the consumer market, it is essential that we not lose sight of the larger picture and should consider investing time in research. GCC has the ability to actively change and affect the future. One has a great sense of pride when they see Ms. Pac-Man in a cinema or arcade and know that they were involved in the production of that game. Now, the company needs to look beyond the day-to-day production and create long-term goals.

After participants had introduced themselves, Kevin presented a brief overview of GCC and its current relationship with Warner Communications/Atari. He emphasized that our central function is to develop and provide ideas by applying our talents to computer aided entertainment. Mr. Manny Gerard, President of

June 17, 1982

After participants had introduced themselves, Kevin presented a brief overview of GCC and its current relationship with Warner Communications/Atari. He emphasized that our central function is to develop and provide ideas by applying our talents to computer aided entertainment. Mr. Manny Gerard, President of Warner Communications, states that we "can shape the future by inventing it." Mr. Gerard looks to us to "climb up and down the corporate ladder, becoming involved in all aspects of Atari, not just videogames." He perceives GCC as providing a supplement for Atari's in-house engineering.

The following provides a summary of the ideas/suggestions presented during the remainder of the meeting. Initials of the speaker follow in parentheses.

1. Design new entertainment base units to replace the current VCS units. (KS)

September 1982
Delivered to Atari

Combat II

Phoenix

Vanguard

Qix

Centipede

Atari's Cube

proposal for VCS Extended RAM Cartridge

General Computer Company

215 First Street
Cambridge, Massachusetts 02142
Telephone (617) 492-5500

CONFIDENTIAL

Proposal for a Video Cartridge System
Extended RAM Cartridge

Tom Westberg and Alan Hodgkinson
General Computer Company

September 15, 1982
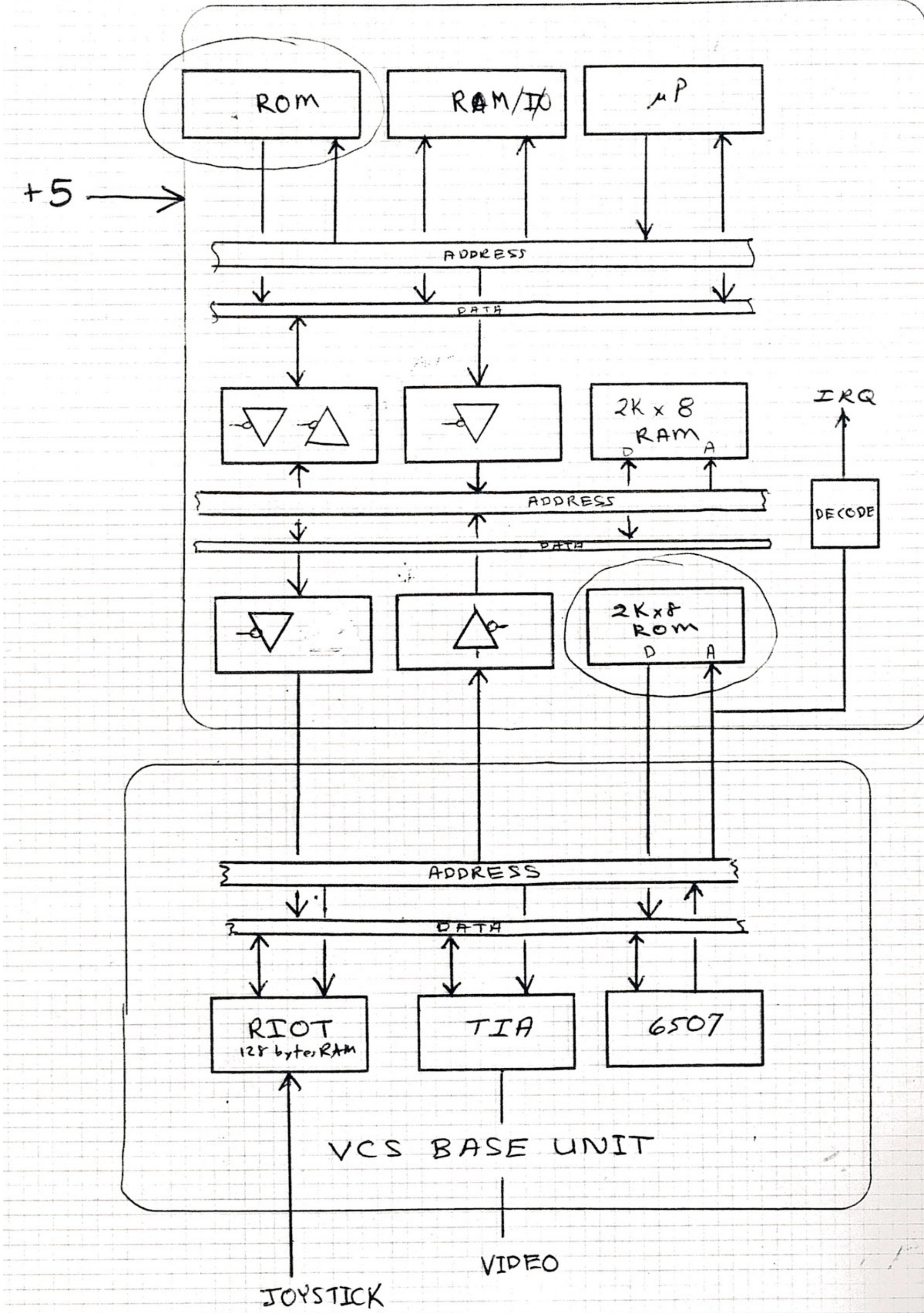
VLSI design at GCC 1982–1983

VLSI Technology, Inc.

October 18: meeting with VTI in Cambridge
design class begins at VTI

November: more meetings with VTI

January 3: design class begins at GCC

January: acquire VAX 11/750 to run VTI tools

SPRING

or,

Life after PAM

Prepared by
Steve Golson

December 7, 1982
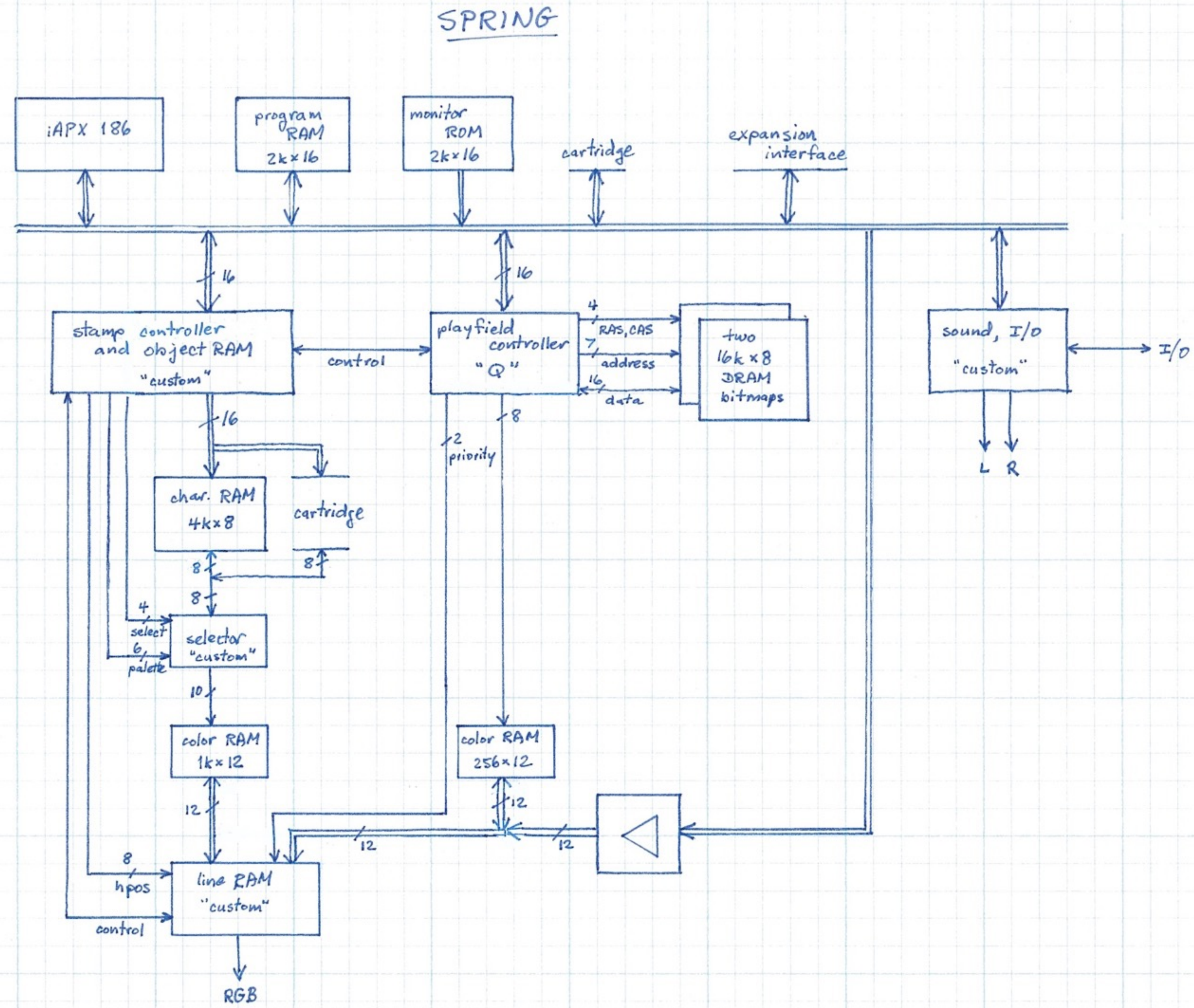
SPRING

- iAPX 186
- program RAM 2k × 16
- monitor ROM 2k × 16
- cartridge
- expansion interface

stamp controller and object RAM "custom"

control

playfield controller "Q"
- RAS, CAS 4
- address 7
- data 16

two 16k × 8 DRAM bitmaps

sound, I/O "custom" → I/O

L R

char. RAM 4k × 8

cartridge

selector "custom"
- 4 select
- 6 palate

color RAM 1k × 12

2 priority

color RAM 256 × 12

12

line RAM "custom"
- 8 hpos
- control

RGB

SPRING

Prepared by

Kevin G. Curran
Steve Golson
Scott Griffith
Art Ng
Chris Rode
Tom Westberg

January 12, 1983

March 1983

TIA+

Pre-Spring Fling

March 1983
Pre-Spring Fling ideas

"build a TIA with more players"

add a scanline buffer

add a double scanline buffer

"just put a TIA on the board"

design a whole new graphics+sound chip…

Code names

TIA

Television Interface Adapter

Tia Maria

Maria

GCC codename: Maria

VTI codename: Ginger

Maria

- internal double-buffered line RAM

- DMA with display list

- sound

- same color phase shifter as TIA

- same color sync as TIA

3600 System

- completely 2600 compatible

- more RAM

- 64k addressable

- all address pins and R/W available on cart

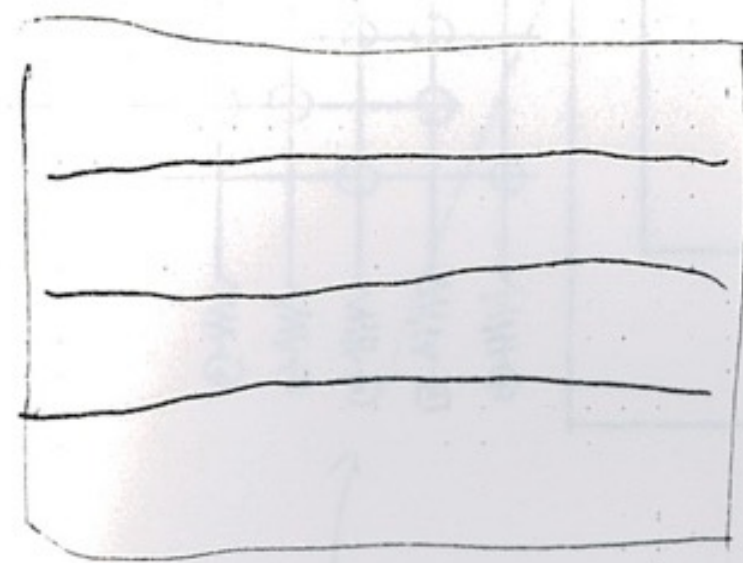- better graphics+sound from Maria

Gary Boone

1. For your information, most of GCC are going today to Disney World
    on company trip. Tom is going only Sat and Sun. Chris is not going.
    It is likely this will make telephone contact awkward; there is no
    direct line into our basement quarters. If phone doesn't work, try
    'mail' or get me at Holiday Inn - Cambridge.

2. Enthusiasm is great; These guys work at all hours. Tom is putting
    out very readable pla-style schematics, and his part of the chip
    contains alll the really random logic. Chris is still struggling
    with the data structures mapping into and out of the ram; He views
    this as the kernal of the chip, and probably cannot focus on other
    matters until he has it worked out. I think we have to live with
    this situation.

3. Mike has been helpful with logistics, intro to prism, and we plan
    for him to work on path timing. He likes to use 'tau' approach; I
    said fine, we just need someone trying to find the tight timing paths.
    Mike has also been spending some time on other design center matters,
    per direction from Wes. I emphasized the criticality of this week,
    and Mike agreed to put in full day here regardless of other tasks.

4. Still waiting for p.o. number.

Gary 4/6/83

2. Regarding overall program risk, GCC thinks there is a good chance Atari will drop the ball somewhere (re this Xmas), but GCC is not discouraged -- They believe it's good 1984 Xmas as well.

AUDIO
FREQ
REG

BINARY COUNTER
AND COMPARATOR

$A\phi 1$

$T\phi 1$

clear

MATCH

D0	IL	BCC
D1	IL	BCC
D2	IL	BCC
D3	IL	BCC
D4	IL	BCC
D5	IL	BCC
D6	IL	BCC
D7	IL	BCC

AUFn

C_{out}

Extend to 12 bits
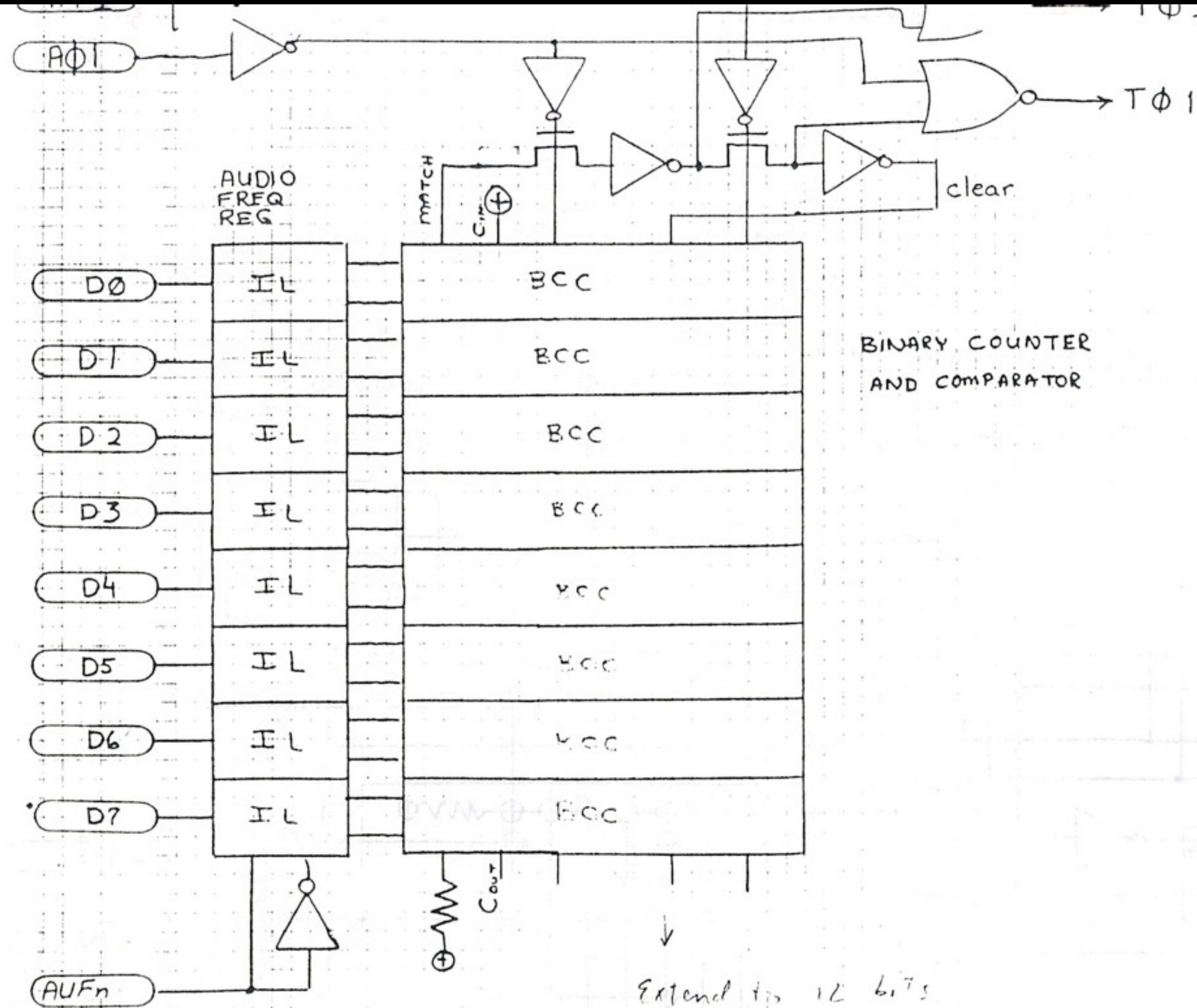
TW 4/6
AUDIO
FREQ DIVIDER
(2 REQ'D)

April–June 1983

Maria chip

Maria TTL breadboard

3600 game system

many game carts

3600 Home Computer

Maria part number?

Maria part number?

Maria part number?

GCC 1701

July 1983

Maria tapes out July 4

Parts back late July

Success!
(one missing depletion implant)

One small problem…

Maria II

It has become apparent that the current Maria architecture requires too much cpu time to allow effective use of its display capabilities. You can put a lot on the screen but there's no time to move it. Solutions to this problem have ranged from doubling the cpu clock (which would have required 120 nsec ROMs-- too fast to be economical today) to adding a second processor to the system board (which would require a much larger cartridge bus). An alternative to this is to modify the Maria chip architecture to remove some of the processor's burden. To be practical (without completely re-designing the Maria chip) we need to keep any changes small and localized. The following changes have been proposed:

1) The processor should not have to set up the Maria chip on each scan line. With Maria I the cpu spends most of its time either waiting (WSYN) or acting as a simple counter for vertical position. Maria II should be able to load its own display list pointers from a display list list. As before, we cannot have a unique display list for each scan line, so a given display list must be repeated throughout each line of a 'zone'. The offset register must be incremented at the end of each line of dma. Once the offset register reaches zero a new display list must be fetched (otherwise, the previous display list will be repeated). There seem to be two ways to go with the display lists; make them all linked together or have a second list of list pointers. Although the first method is simpler in hardware, we have chosen the list of lists to simplify the software overhead involved.

list of list ptrs.

July 1983

Maria 2

Features of this system:

- The display will remain onscreen, even if you halt the emulator processor.
- Available cpu time is greatly increased: Assuming a minimum 15-cycle kernel on each of 192 scanlines, and the rest of on-screen time dedicated to dma, available cycles increase by at least 25%. In general, the increase will be much greater than this, since most scanline dma's do not require 390 7M cycles.
- Kernels go away, except for dli handlers.
- A reasonable Computer add-on is possible for very little cost. Essentially, the current dumb keyboard work still applies, while a RAM-I/O expander cart could make it very useable.

Negative features:

- The Loader still lives, at least for some games.
- Many zeroes are still wasted in char ROM.
- Flexibility is all but dead. You can't do a whole lot more than we envision today. (Actually the flexibility in Maria I may have been a myth; there wasn't enough cpu time to use it.)
- Relative to split-bus systems, a lot of cpu time is still lost to dma.

Since the 7-11 status was somewhat grim on several points, this status report
gives several updates (plus and minus) keyed to the same six topics.

1. 1702: The improved version requested by the programmers is also requested
    by Kevin, and this information has been given to VTI management. The basic
    plan is that Tom and Chris will characterize/verify/prove the 1701 initial
    baseline (working with Thierry and Bob in San Jose); and Larry, Art and
    Steve are being asked to design/implement the 1702 changes in Cambridge.

2. BREADBOARD: A major problem was isolated yesterday, which means that 1701
    masks require a change local to RLOG to assure 6502A - 6532A compatibility.
    (This change will of course be included with the new 1702 version.)

3. BOARD: One fully-funtional board is available for 1701 test/characterization;
    and a second one is being prepared today.

4. CRYSTAL: Parallel-resonant 7.16 MHz crystals have been ordered. For testing,
    VTI's precision digital pulse generator will be injected on pin 4, initially.

5. CHANGES: As discussed in point 2 above, one necessary change has surfaced.
    No other changes have been isolated, but breadboard debugging and some VSIM
    is still proceeding.

6. TEST: Chris has tried for two nights without success to generate a simple
    two-scan .trc for VTI conversion to SETF patterns. He will try again tonight.
    Bob want this to at least check out the test/conversion procedure, but he
    believes the most important method of characterization will use available
    6502 header/graphics routines and the 'real' boards and video output.

Overall, it looks like: WE WILL SUCCEED, BUT NOT AS SOON AS WE EXPECTED.

Gary

GCC 1702 / Maria 2

tapeout to VTI
September 17, 1983

parts back
September 28, 1983

3600 System

32

Steven McDougal

3600 SOFTWARE GUIDE

INTRODUCTION   revised 10/19/83

        The 3600 is a product which combines the ATARI 2600 hardware
with a new graphics chip called MARIA. The entire 2600 library of
cartridges will run on the 3600 as they do on the 2600, but new
cartridges designed to access the improved hardware will be able to
take advantage of a large number of improvements.

OVERVIEW OF 3600

        Ignoring the 2600 environment, which is identical to the ATARI
2600, the 3600 environment is characterized by the following:

             (2) 6116's   - 4K bytes of RAM.
                 6532   - I/O.
                 TIA   - sounds, some input ports.
                 Expanded cartridge slot.
                 SALLY(6502) - microprocessor running at 1.79 MHz.
                 MARIA   - all video.

        Additionally, there is a protection circuit which verifies
that each cartridge has the correct encrypted data before enabling
3600 mode. Encryption will be covered in another document, but see
Appendix 1, 3600 Memory Map, for information about reserving space for
encryption.

        6116's

3600
PCB
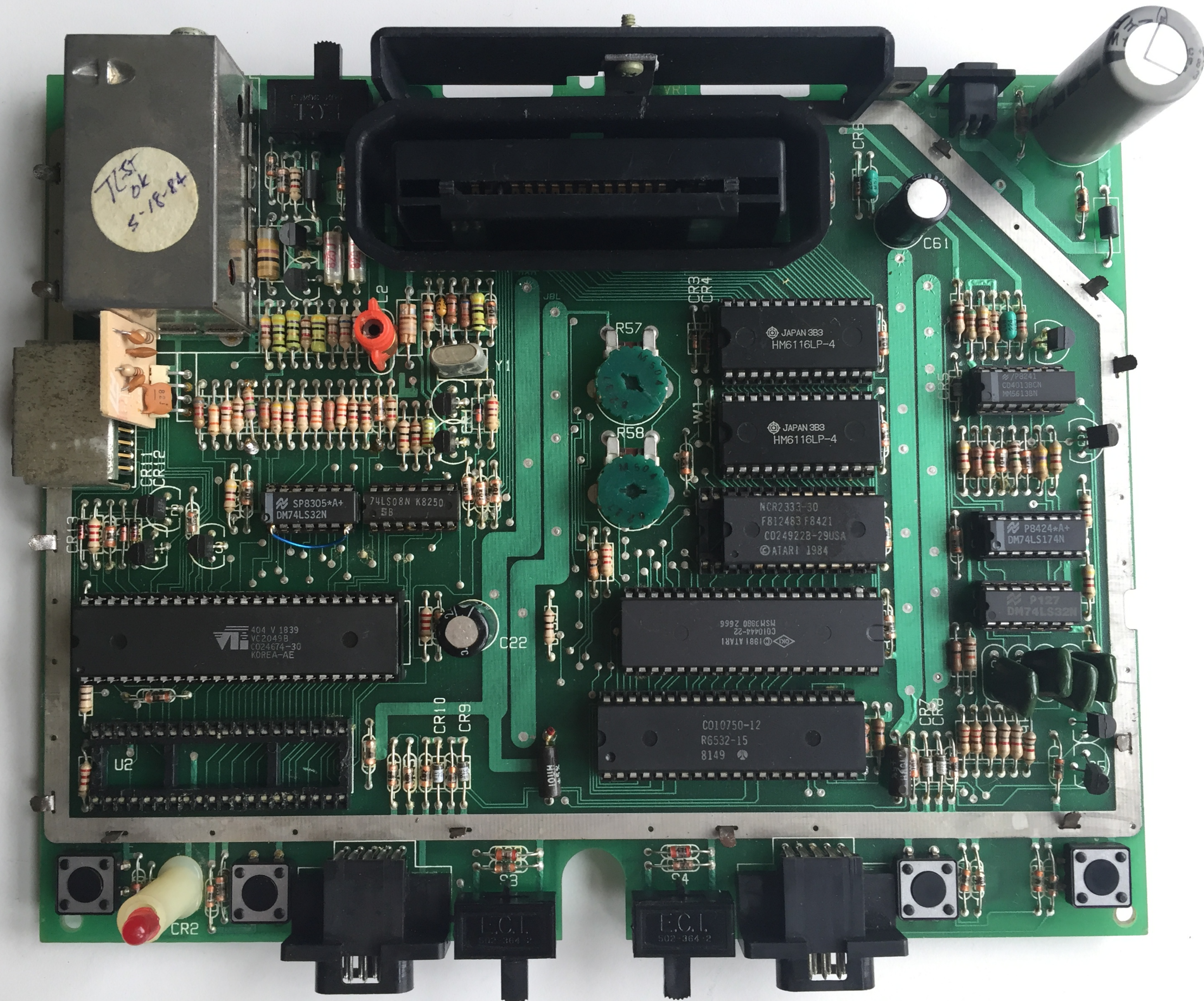
3600 enclosure and controllers

2600　　3600

Cartridge Connectors

3600 Graphics

34 cyc (1.79 MHz)   80 cyc (1.79 Mhz)
136 cyc (7.16 MHz)   320 cyc (7.16 MHz)
68 Pixels   160 Pixels

15

25

VBLANK

243   192

VISIBLE

26

4

VBLANK

HBLANK

228 Pixels
456 cycles (@7.16 MHz)
114 cycles (@1.79 MHz)
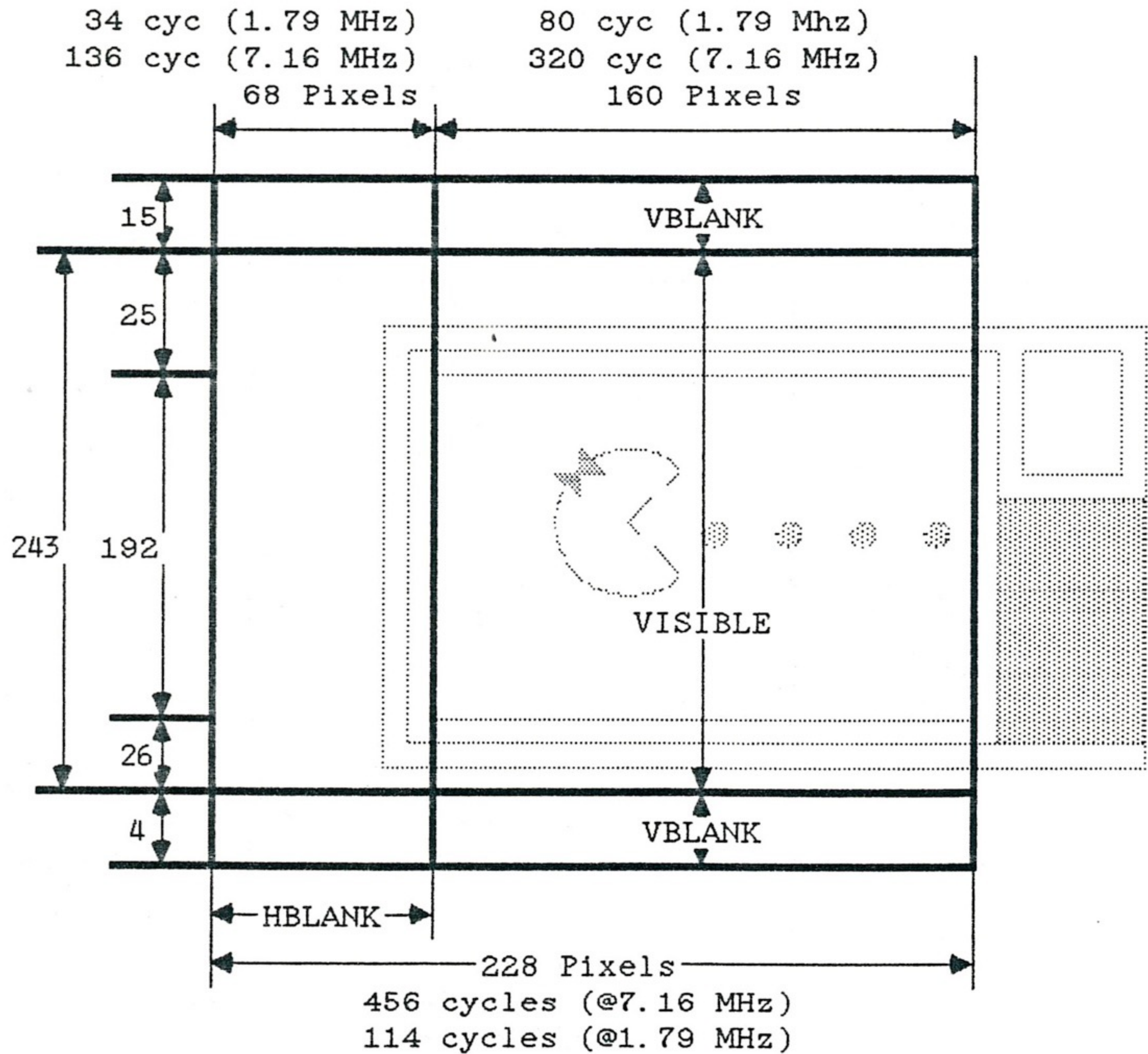
A Guided Tour of Maria II

Incomplete...

Tom Westberg

Purpose of Maria II

The Maria II graphics controller chip is intended mainly for generating a raster-scan video display suitable for a personal computer or video game image. It has several other functions in a microprocessor-based system, intended to reduce overall chip count and aid in compatibility with a previous video game system, the Atari 2600.

This Guided Tour will be broken up into two major parts: the first section will discuss the chip as a graphics controller, while the second section will address the system-related features of the chip. Throughout this description, it will be assumed that the reader is familiar with raster-scan video and at least some methods of generating computer images on a raster display.

Graphics Controller:

Introduction

The Maria II chip operates fundamentally by transferring blocks of data from the microprocessor's memory space into an internal staging memory (the **line ram**) and then synchronously sending out the contents of this internal memory as pixel data. The final output of the chip is in a form which is easily converted to an NTSC (or PAL) video signal. The video functions of the chip may be divided into four blocks: The **sync** circuit provides the overall horizontal and vertical video timing. It also provides some timing signals to the **dma** circuit. The **dma** circuit handles the transfer of memory blocks from the microprocessor's memory space into the internal staging memory, the **line ram**. The **line ram** is used to build a single scanline image of the video display, prior to its output. The **output** section includes **color ram** and a **color phase shifter** circuit.

Maria 1702B Graphics Processor

3μ NMOS
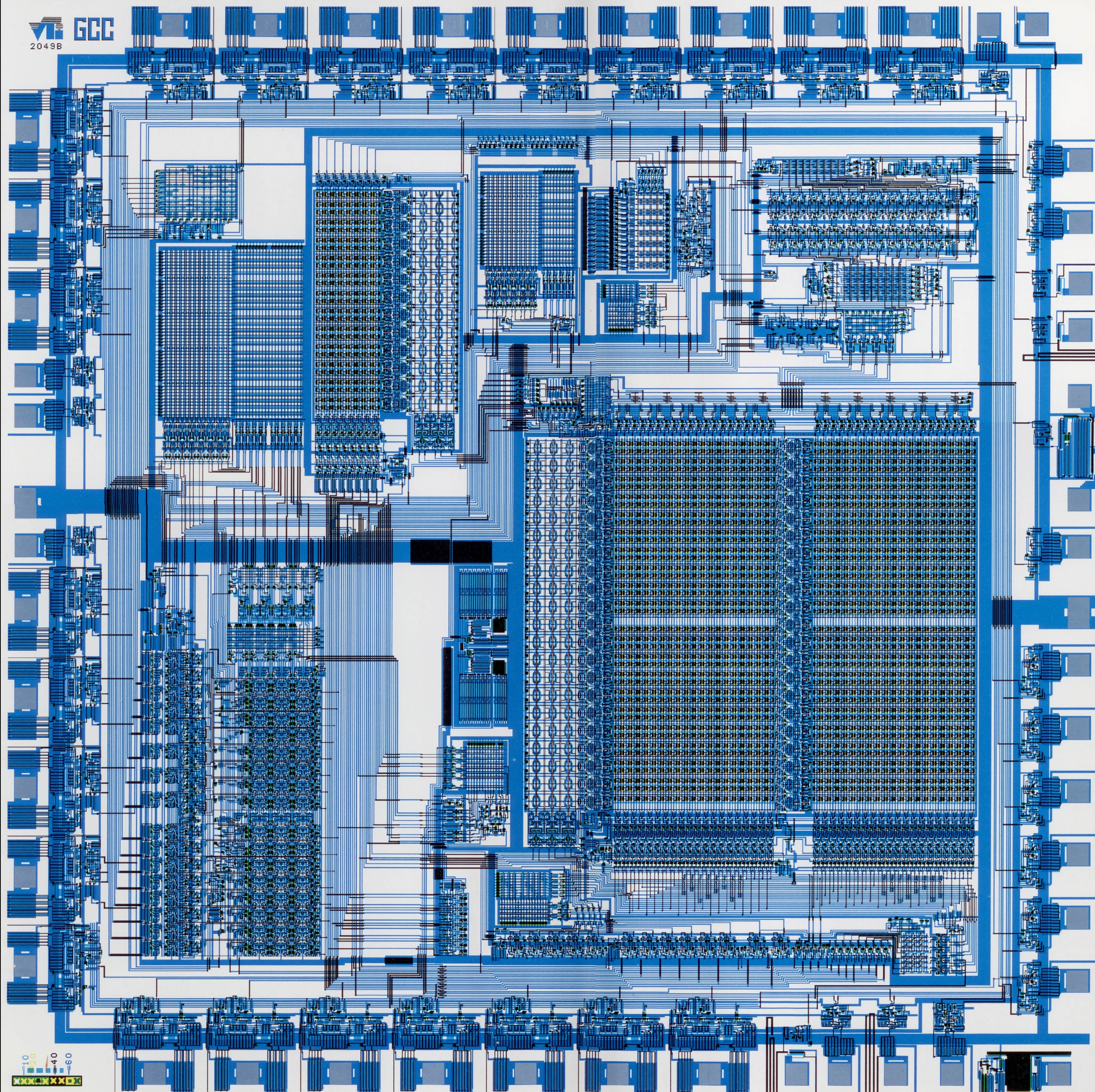
~24k transistors

7.16 MHz

242 x 244 mils

48-pin plastic DIP

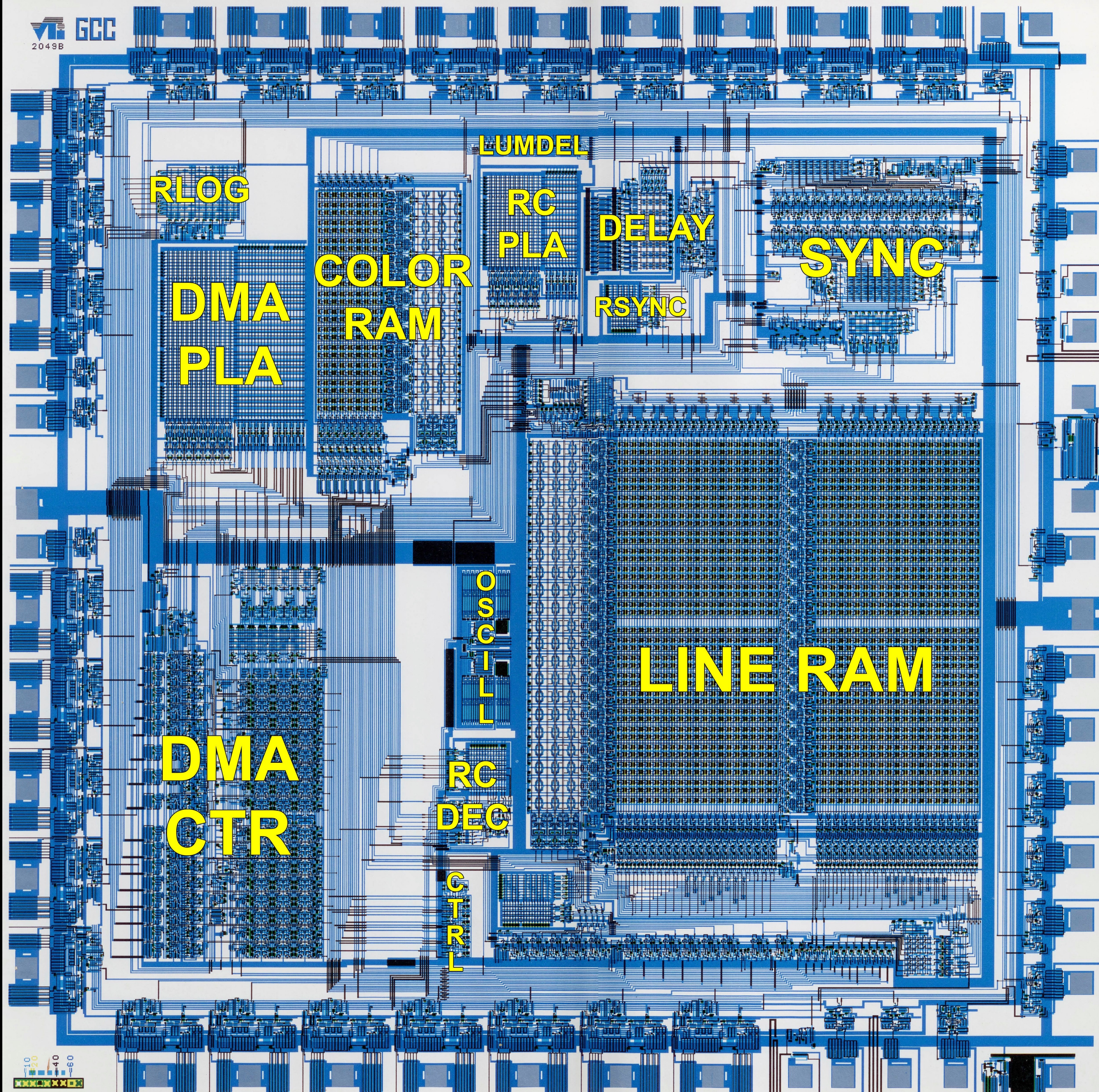VLSI Technology, Inc.

Maria 1702B Graphics Processor

3μ NMOS

~24k transistors

7.16 MHz

242 x 244 mils

48-pin plastic DIP

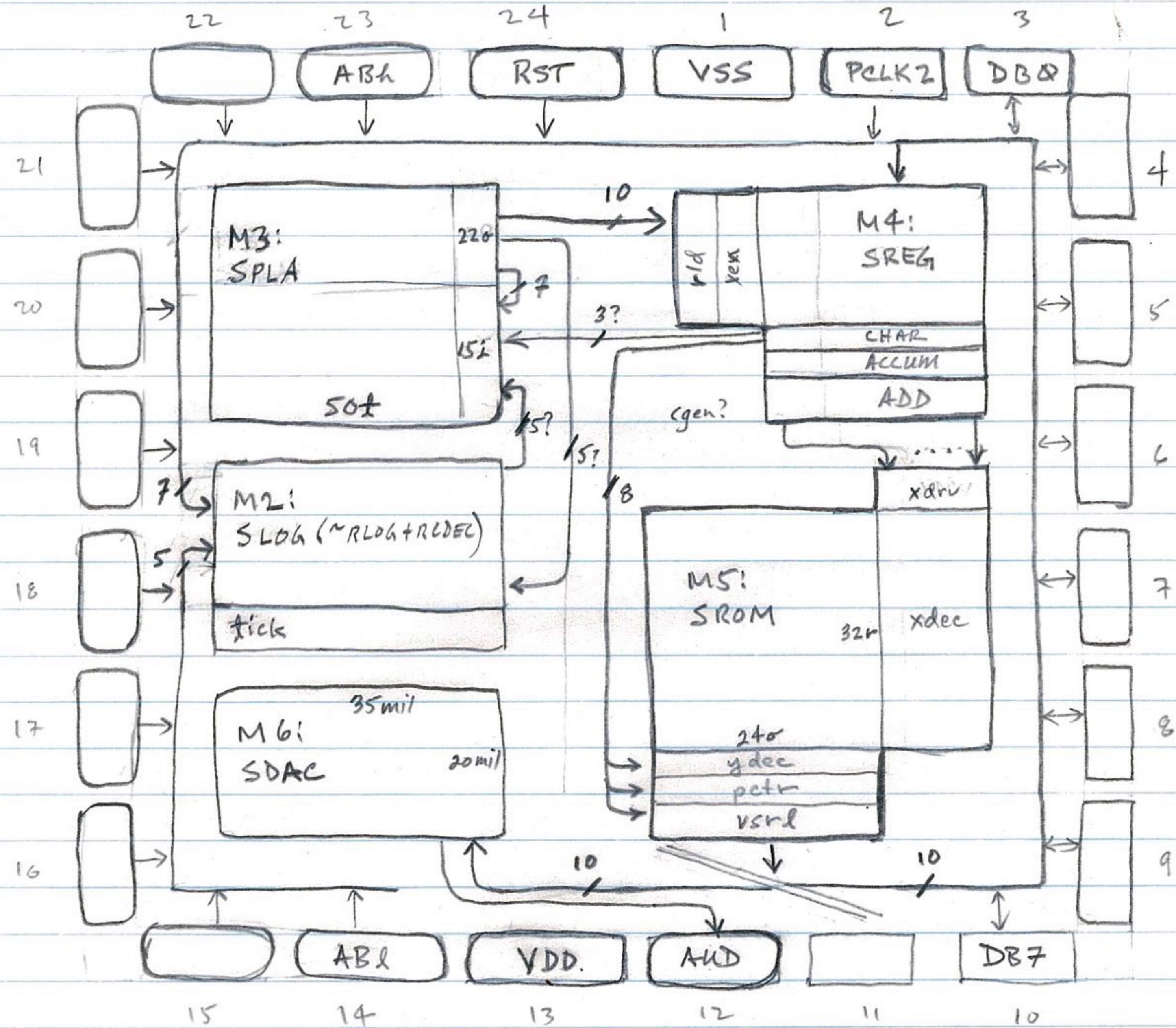VLSI Technology, Inc.

143100 9

3600 Sound

0

MS.
PAC-MAN

STARRING

MS PAC-MAN

COPYRIGHT ATARI 1984

Mini Gumby

Minnie

SUBJECT i MS FLOORPLAN (FOR SIZING REVIEW)

Life at GCC
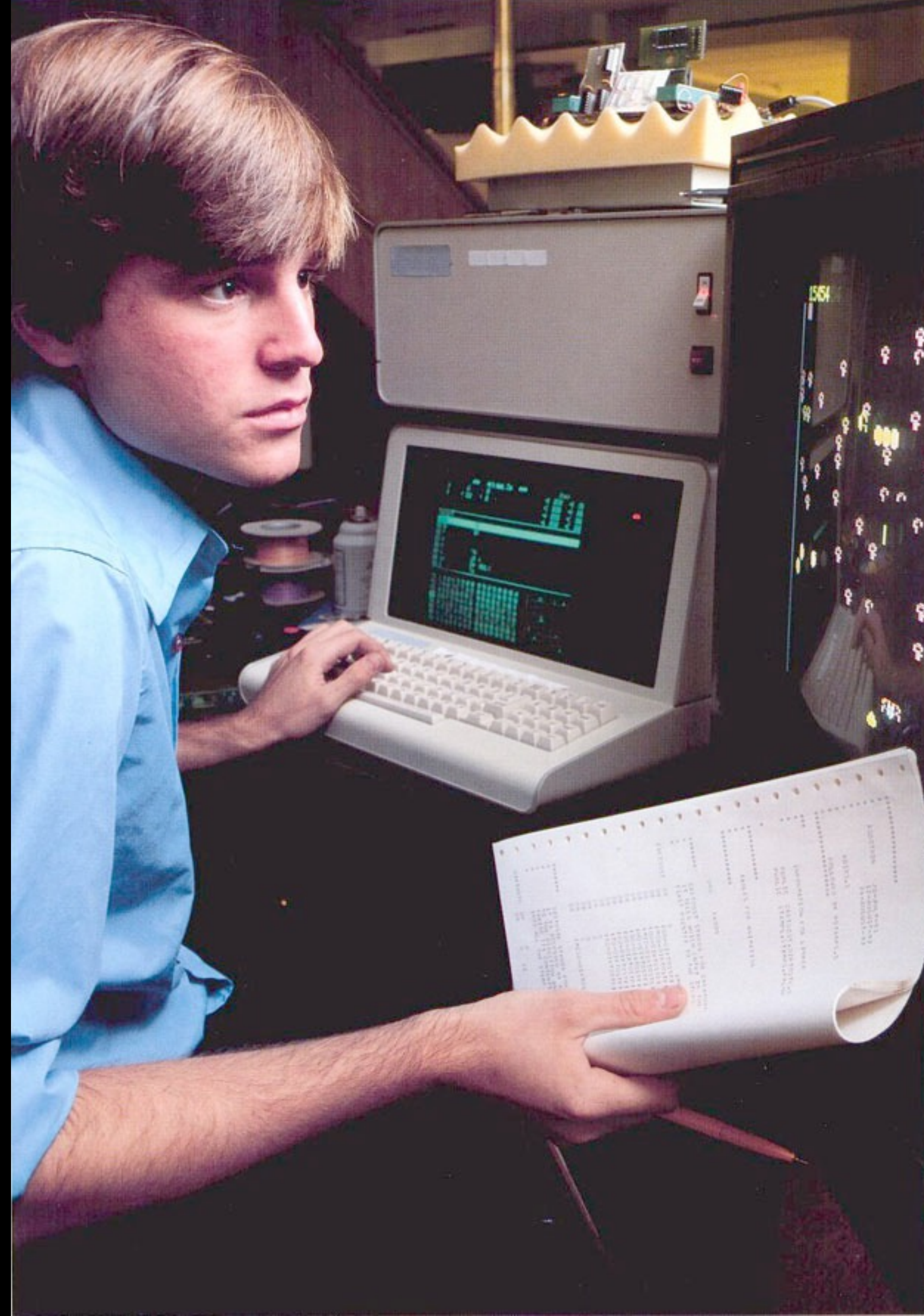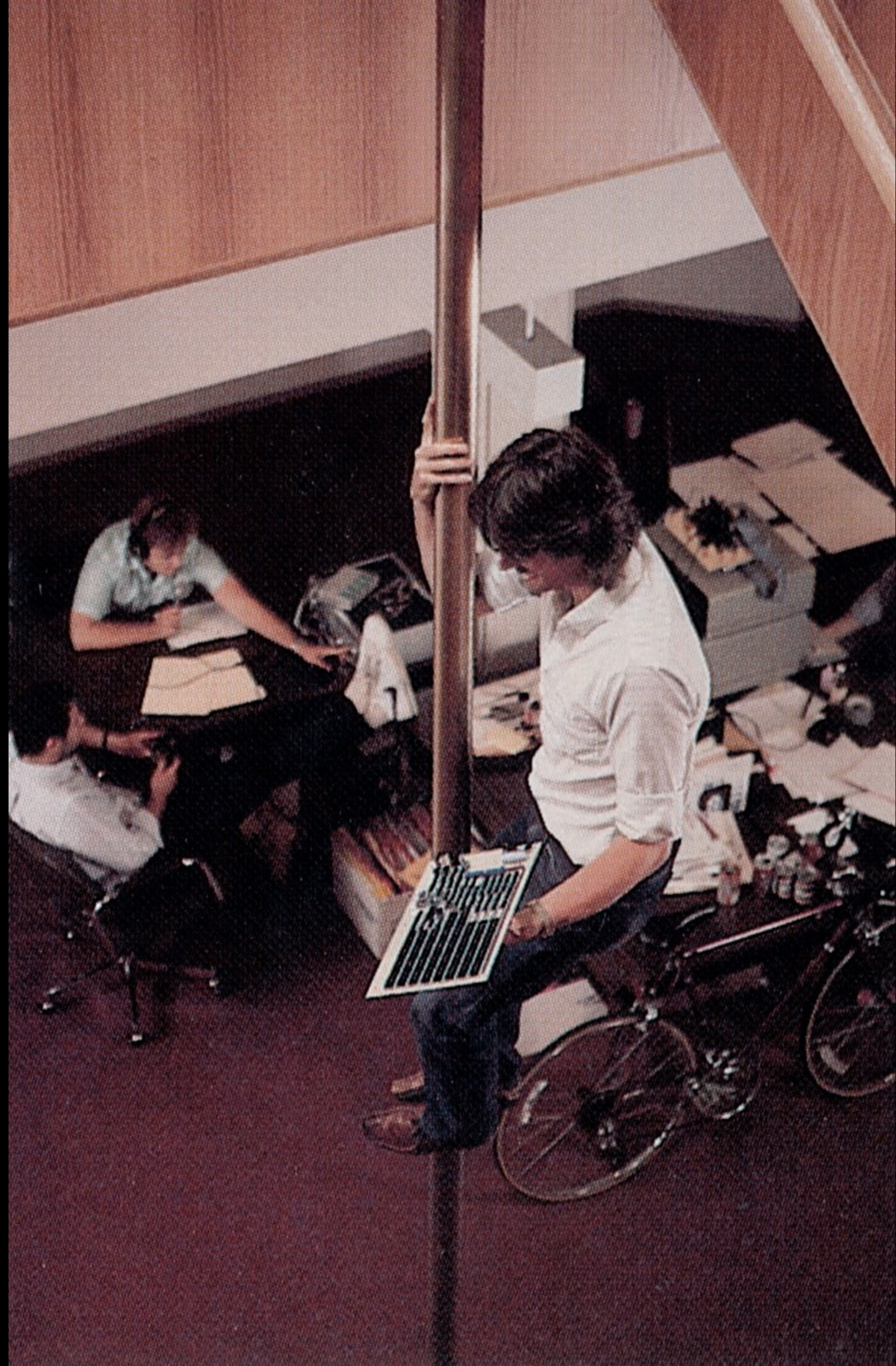
Encryption

Authentication

Security

3600 High Score Cartridge

The high score cart will plug into the cart slot on the 3600
and provide a cart slot for other carts. It will provide nonvolitile
ram for recording high scores achieved by home game players, and the
initials of the players who got the scores. For this to be possible
all 3600 carts will have to provide a certain interface to the software
in the high score cart. The HSC will not provide this facility to
2600 carts, but it will not interfere with them either.

The high score cart will store the five highest scores of up
to 70 different games. Each different difficulty level of a cartridge
is considered a different game. The same difficulty level but with different
controls may also be considered a different game? (NO,Rev2) When a score
is entered for a game that does not already have a high score table, one
is created. If all 70 are in use then the table for the game that was
played least recently is cleared and used for the new game.

The high score cart is ordinarily inactive. It has control only
when explicitly called by the game program. There are two entry points
defined for the HSC. The first, HSCATRCT, is called during the cart's
attract mode, between auto play and the title page. The second, HSCENTER,
is called with each player's score immediately after all players have
finished their games. It determines if the score qualifies for the
high score table, and if it does, gets the players initials, and adjusts
the high score table. Both routines display the high score table for
the game, except for HSCATRCT when there is no high score table for
a particular game. Then it will not change the display list. Both
routines return with 0 if the display list wasn't changed (HSCATRCT only),
1 if it was but the high score table was (both), and 2 if both were
(HSCENTER only). The game can do whatever it feels like with this info.

SPECIFICATIONS

Each cart must determine if the high score cart is present before
calling it. This is done with the following sequence:

```
        LDA     HSCATRCT                ;All symbols prefixed with "HSC"
        CMP     $HSCBYTE0               ;Will be defined in NH:MPROLOG.S.
        BNE     NOHSC                   ;You define.
```

3600 Home Computer

3600 Computer Project Proposal

Alan Hodgkinson
August 3, 1983

The 3600 Computer Product Line

The 3600 Computer is an add on keyboard for the 3600 Video Game Player. Figure 1 shows the complete product line.

The 3600 Computer would probably be sold with a single application cartridge (thrown in for 'free'). All software should include prerecorded 'interesting' software (perhaps on cassette or wafer tape). The idea is that a cartridge the consumer buys is immediately useful. Thus the system will be 'fun' right away, without the user having to expend any effort typing in programs or data.

The RAM memory in the keyboard unit will have a battery backup and will remember whatever the user was doing when he shuts it off. This non-volatile RAM eliminates the need for the low end user to buy a mass storage device. A wafer tape drive will be available for mass storage, or if the user wants to save money and still store data, he can use his own cassette tape machine.

The word processing package will be available with two optional printers: a letter quality printer and an inexpensive dot matrix printer (which might be used with the computer language cartridges).

Software to be offered with the 3600 Computer:

80 Column word processor

The Game Designer

BASIC

LOGO

FORTH

Adventure

November 1983

Atari considering TIA/Maria combo chip

name may be 2600GC, initial price $109

Atari still planning to support 5200
and have it be the "superior" machine

"they REALLY like the 3600"

word is leaking out to press

December 1983

Atari in-house name: 9000

plan to build Centipede
into encryption ROM

final silicon on Maria 2B
(2, 2S, 2A, 2B)

PAL Maria starts

videodisc interface

Mini-Gumby scheduled
complete 2/15/84

3600 adapter for 5200

3600 Trakball

3600 Home Computer:
Keyboard, Game Designer,
Word Processor

Expansion Interface
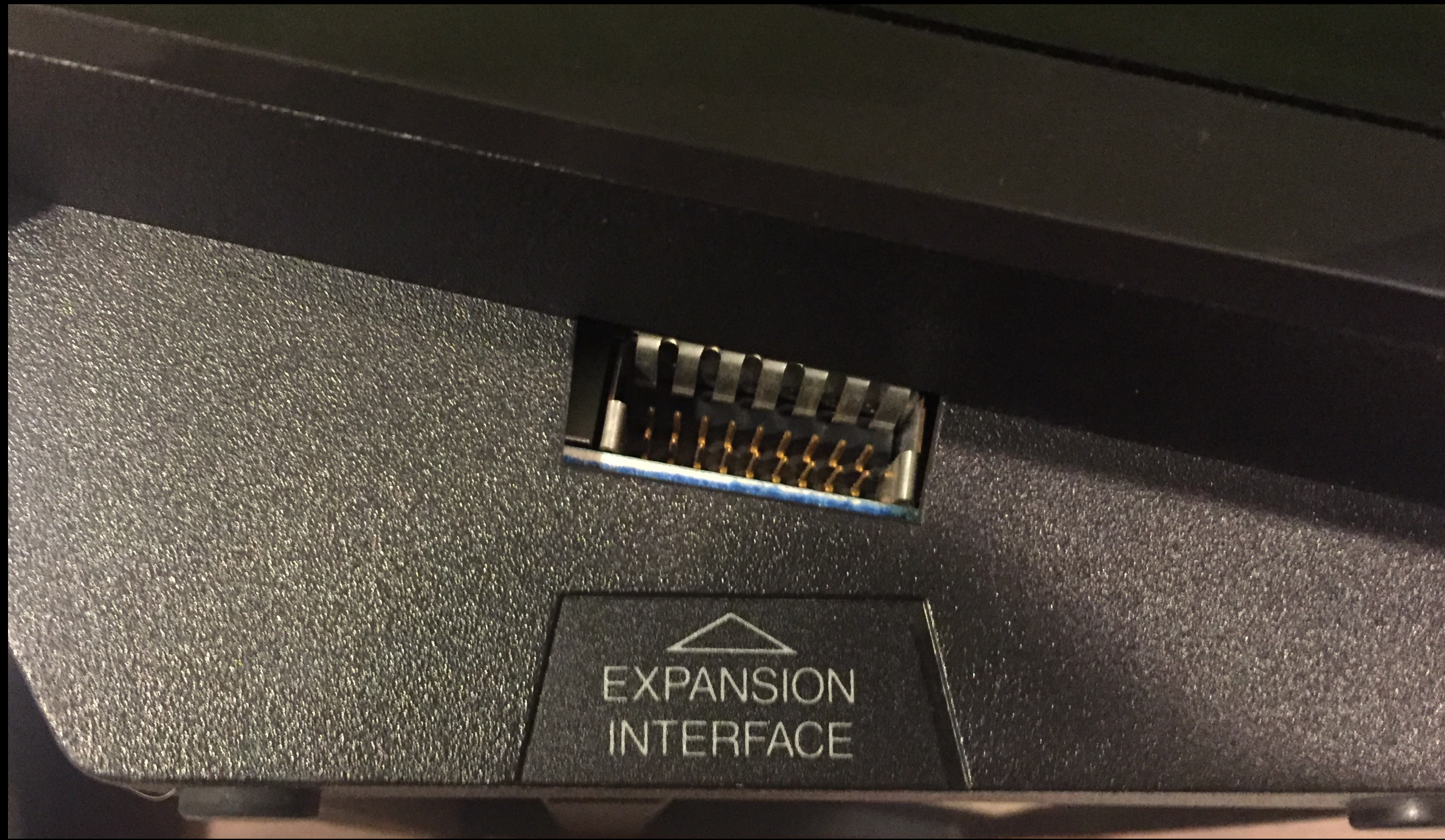
January 1984
Winter CES

January 1984
Winter CES

January 1984

Munitions Control Board

Centipede + encryption ROM released

BallBlaster for 7800 starts (Topsy Turvy)

Mini-Gumby TTL breadboard working

7800 ProSystem official name

GCC1702B "MARIA" CHIP

Acceptance Specification
(Atari Part   Drawing)
Draft January 16, 1984

GENERAL COMPUTER COMPANY

The following documents the user interface and coding standards we are using for the 3600. This is meant both to provide a guide to program development and as a check list for finished carts. Please compare these against any existing games. Some of these standards are changed, and they supercede previous standards. Note that these standards may be waived on a case-by-case basis to maintain copyright loyalty or for games with exceptional requirements.

SECTION I: USER INTERFACE

I.1) Power-up

Games should power-up displaying a TITLE page. Game parameters should be single player and DEFAULT DIFFICULTY. After about 20 seconds, the game should go into the HI SCORE display. After this, AUTO-PLAY is started. From then on the game alternates between TITLE page, HI SCORE display, and AUTO-PLAY. This is called the IDLE SEQUENCE.

I.1.1) Title Page

The TITLE PAGE should contain spiffy graphics including the game title and logo. The ATARI copyright MUST appear in the form:
<div align="center">

(c) ATARI 1984

or

copyright ATARI 1984
</div>

Some games may also require a copyright message for the licensor. The names GCC, General Computer, etc should NOT appear anywhere on the display.

I.1.2) Hi Score Display

All games should be made compatable with the Hi Score Cart. When doing the HI SCORE display, the game should cycle through each possible game difficulty or option giving about 5 seconds of display for the high scores for each. These should go from low difficulty to high. The time each is displayed can vary depending on how many hi score tables exist.

If there is no Hi Score Cart plugged in, the HI SCORE display is bypassed. Please refer to the Hi Score Cart documentation for implementation details.

February 1984

Atari increases production from 50k to 200k

1984 production *one million consoles*

2 to 3 million over next 3 years

design of Anna VLSI chip begins
for 7800 Keyboard Computer

April 1984

security ROM finished, no Centipede

security + Pole Position II ROM developed

High Score Cart accepted as official Atari product

Lucasfilm Games: Ballblazer, Rescue Mission

Maria2C (internal pullup in wrong place)

April 1984
7800 Keyboard Computer

new interface through joystick

no need for Anna custom VLSI chip

2 prototypes built in 26 hours

uses standard Atari peripherals

5/16

① May 21   show to media
                             + distribs

② June 5   CES

③ late June ?   first public sale
early July ?

" middle July " —   Joel Oberman

1984 Summer CES

MEMORANDUM

TO: CES people
FROM: Doug
RE: CES
DATE: May 25, 1984

On Sunday, June 3, Atari will be officially introducing the 7800 ProSystem at the summer Consumer Electronic Show in Chicago. The entire system will be shown with stations showing the following projects:

Ms Pacman	Pole Position	Centipede
3D Asteroids	Joust	Dig Dug
Desert Falcon	Robotron	Galaga
Xevious	Food Fight	Ball Blazer
Rescue on Fractalus	Track and Field	high Score Cart
5200 Adapter	Basic	Atari Lab
Text Editor	Typing Tutor	Terminal

In addition 2600 Jr Pacman, 2600 Track and Field, and 5200 Jr Pacman will be shown.

o Wear your Atari badge while on duty.

o If asked, you may say that you work for a design group that is affiliated with Atari. If pressed, you may say that you don't work in California. Don't go beyond this though; refer persistent questions to the Atari staff.

o If you are asked if GCC designed the 7800, say that it was done jointly with Atari. Be vague about who did what (even though we did it all).

o Atari reorganization and layoffs: No comment. Refer to Atari.

o Encryption: this is a little sticky since Atari hasn't really announced encryption. Say that you don't know anything about it, even whether it exists or not.o Availability and Pricing:

Base unit:	July	$149 retail
Keyboard:	Fourth quarter	Under $100
HSC:	Fourth quarter	Not yet determined
Int'l:	Third quarter	Not set; varies among countries

ATARI DISPLAYS ADVANCED 7800 PROSYSTEM VIDEO GAME

CHICAGO (June 3, 1984) -- Atari Inc. today displayed the 7800 ProSystem, a powerful video game console that boasts the most advanced color graphics of any home computer or video game currently available. The versatile ProSystem, which plays a new line of software as well as all game cartridges designed for the ATARI 2600 Video Computer System, can be expanded into an introductory computer with the addition of an optional full-stroke keyboard.

To maximize its extraordinary graphics capabilities-- made possible by a custom semiconductor chip nicknamed "Maria" -- Atari showed 13 specially designed games for the 7800 ProSystem. The recently announced ATARI/LUCASFILM* titles are featured on the ProSystem, as well as an original game, five exclusive arcade hits never before available for any home system and five arcade favorites with enhanced graphics.

To transform the 7800 ProSystem into an introductory home computer, the owner can attach an optional full-stroke professional keyboard to the system. The 7800 Computer Keyboard is compatible with virtually all Atari Home Computer peripherals. A line of selected computer software, including word processing and creative learning and personal development titles are scheduled to be available on the system. The Computer Keyboard will operate with 4K of Random Access Memory (RAM) expandable to 20K, ample memory for the novice.

"We believe the 7800 ProSystem represents the state of the art for video games," said David Ruckert, executive vice president of Atari. "The 7800 ProSystem is a complete system that will grow with consumers through the 1980's."

A spokesperson from Toys-R-Us, one of the leading consumer electronics retailers in the United States, said, "There are still many opportunities for new entries into the video game market that use new technology to create innovative products."

The 7800 ProSystem also features new ProLine Controllers. The controllers, smaller and more streamlined than earlier models, have a self-centering joystick and independent firing buttons easy-to-use for both right and left handers. In addition, all joysticks and controllers for the 2600 VCS are compatible with the 7800 ProSystem.

A new Hi-Score cartridge provides at-home game enthusiasts with a feature that has fueled friendly arcade rivalries for years: the ability to record top scores. By inserting the special Hi-Score cartridge, players for the first time can record high scores achieved in up to 65 games.

In addition to an almost limitless color palette and eye-popping resolution, the 7800 ProSystem can display more than 100 video characters simultaneously — a tremendous advance over competitive home systems. Designed by Atari's software engineers, the unique transistor circuitry in the "Maria" chip creates arcade-like graphics that previously required a circuit board 10 times larger to produce.

5200
Adapter
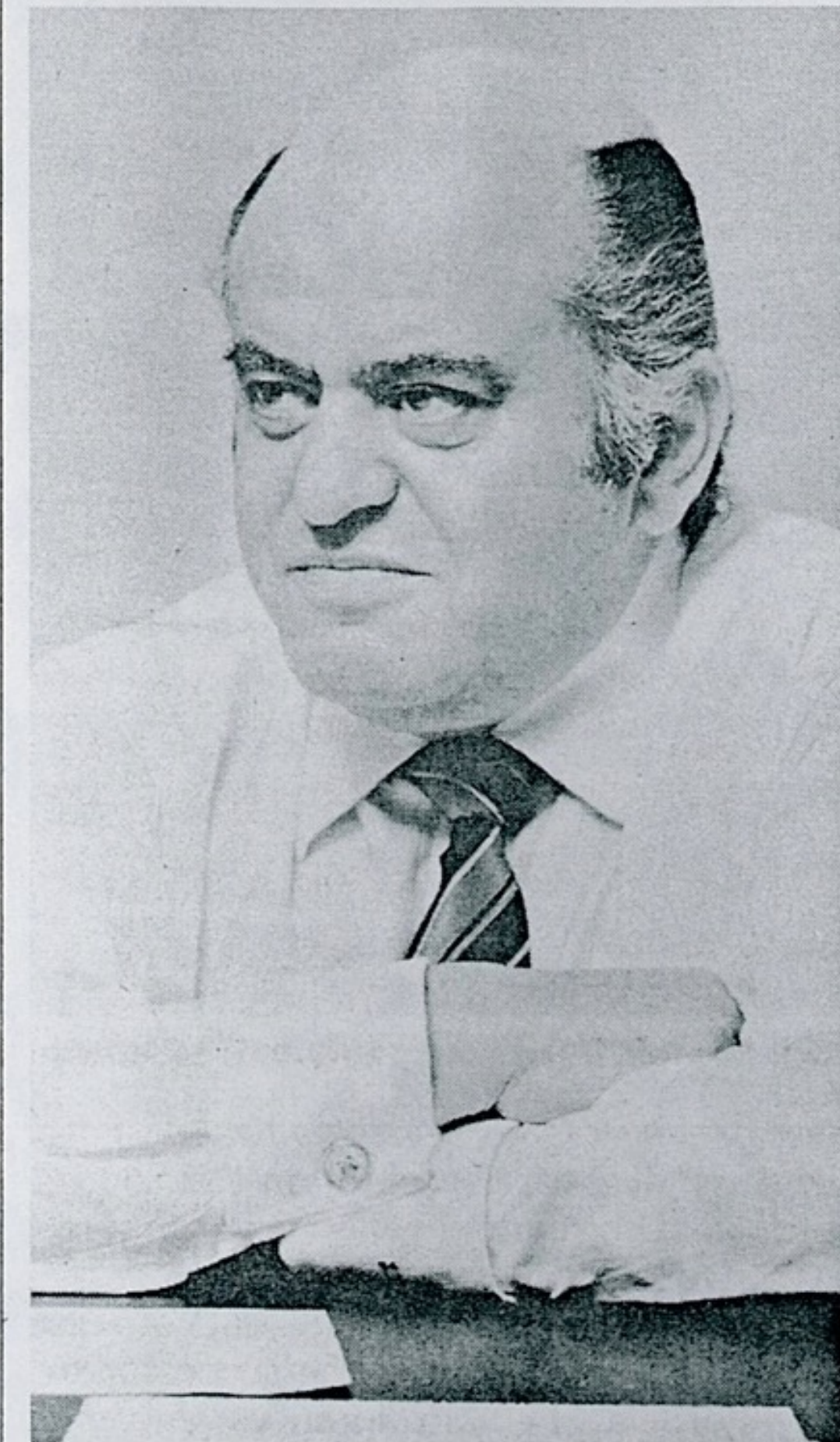
What could possibly go wrong?

July 1, 1984

Jack Tramiel

TIME
July 16, 1984

A New Pac-Man

Jack Tramiel gobbles Atari

Of all Silicon Valley's microchipped wonder companies, Atari was one of the earliest and most colorful. It gave birth to the video-game industry and churned out amusements like Pong, Asteroids and the home version of Pac-Man. It saw its sales explode from $30 million in 1976 to a peak of $2 billion in 1982. It spun off famous employee alumni, like Steven Jobs, co-founder and chairman of Apple Computer. Physically, it spread to 49 buildings around Sunnyvale, Calif. But its fall came even faster, as a fickle public cooled to its video games. Losses hit $539 million last year. Not even TV commercials featuring *M*A*S*H* Superstar Alan Alda could revive Atari. Last week Warner Communications, which has owned Atari since 1976, gave up on turning the company around and sold it. The principal buyer and new boss: Jack Tramiel, 56, a blunt, balding executive whose adage is "Business is war."

Tramiel, the former president of Commodore International, who built it into the leading home-computer manufacturer, will pay no cash for Atari but will pick up $240 million of the company's debts. He will also get rights to buy 1 million Warner shares at $22 each, about equal to last week's price. Warner, which evidently believes that Tramiel can succeed where it failed, will hold onto a 32% stake in Atari.

Tramiel moved swiftly and ruthlessly after arriving at Atari's headquarters in a two-tone Rolls-Royce. As industry experts saw it, he intended to dismantle Atari, regarding it as a start-up operation.

The boss at Sunnyvale: "Business is war"

Unleashing a mighty flood of pink slips.

complete, undisputed authority." The new chairman's blitz would make Atari "leaner and meaner," said Vice President Bruce Entin. "The guy was in command. He was kind of like a general."

A Polish immigrant and survivor of the Auschwitz concentration camp, Tramiel has amassed a fortune estimated at $100 million. He did it mainly by nurturing a typewriter business he founded 26 years ago into giant Commodore Interna-

Jack Tramiel's plans for Atari as of July 1984

build 100,000 7800 for Christmas 1984

retail for $50 (we planned for $150)

carts retail for $10–$15 (half of original plan)

cost-reduced 2600 for $40

7800 R.I.P.

7800 R.I.P. ?

1988

TOPS IN TOYLAND
Best-selling toys of 1988

1. Action set (Nintendo)
2. Pictionary (Games Gang)
3. Power Set (Nintendo)
4. Kitchen Center (Fisher-Price)
5. Control Deck (Nintendo)
6. Li'l Miss Makeup Doll (Mattel)
7. Tape Recorder (Fisher-Price)
8. 7800 Video Game System (Atari)
9. Micro Machines (Lewis Galoob)
10. Pee Wee Herman Talking Doll (Matchbox)

USN&WR—Basic data: NPD Research, *Playthings* magazine

Products designed by GCC for
Atari 2600, 5200 & 7800 Consoles
Atari 400/800 Computers

Asteroids, Atari Video Cube, Ballblazer, Battlezone, Berzerk, Centipede, Combat II, Desert Falcon, Dig Dug, Food Fight, Galaga, Galaxian, Joust, Jr. Pac-Man, Jungle Hunt, Kangaroo, Millipede, Moon Patrol, Ms. Pac-Man, Phoenix, Pole Position, Pole Position II, Qix, RealSports Tennis, Rescue on Fractalus, Robotron 2084, Track & Field, Vanguard, Xevious

Q & A