

MPC79 Chip Photos

A [VLSI Archive Page](#) compiled by [Lynn Conway](#)
[V 11-20-07].

Historical background:

Following the success of her [M.I.T '78 VLSI design course](#), Lynn Conway sought ways to dramatically scale up internet access to quick-turnaround chip prototyping, in order to enable wider testing, refinement and evaluation of the new Mead-Conway design methods. In the spring of 1979 she conceived of a new type of internet-based implementation infrastructure for this purpose, and announced its availability to students taking Mead-Conway courses in the fall of '79.

In a crash-effort that summer at PARC, Alan Bell and Martin Newell created a software prototype of the new "MPC System". Lynn's team used the new system to support rapid prototyping of student design projects at many universities that fall, in a large-scale experimental demonstration-trial of the new VLSI design and implementation methods called "[MPC79](#)". MPC79 played a vital role in the rapid evolution and validation of the [Mead-Conway design methods](#), and the rapid propagation of the methods into [over 100 universities](#) and [scores of startup companies](#) within just several years.

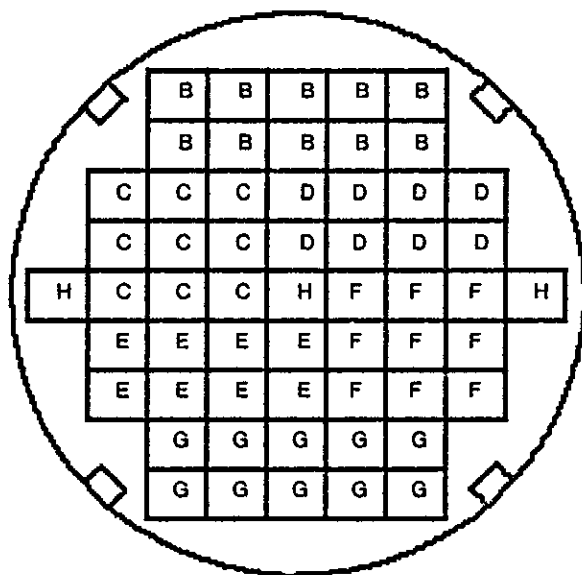
This file contains scans of the original MPC79 chip photos, along with pages from the [MPC79 Implementation Documentation](#) that locate and identify project die-types and individual projects. High resolution JPGs of each die-type can be accessed via the links below and via the [VLSI Archive Spreadsheet](#).

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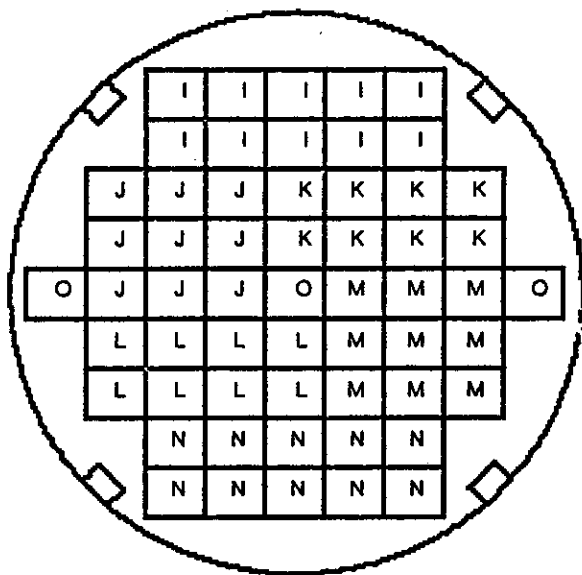
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Links to high-resolution JPGs:

[AB](#), [AC](#), [AD](#), [AE](#), [AF](#), [AG](#), [BI](#), [BJ](#), [BK](#), [BL](#), [BM](#), [BN](#), [BK-8](#), [BK-5](#)

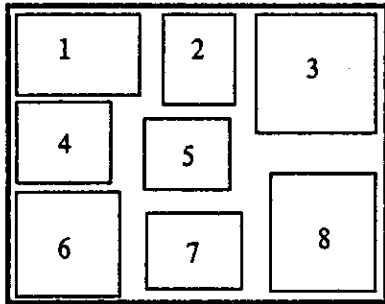


**MPC79A
Wafer Map**

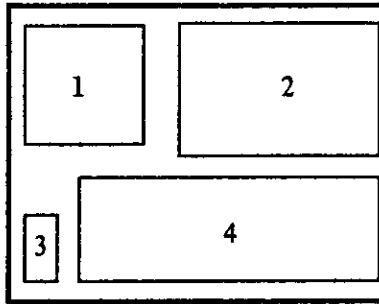


**MPC79B
Wafer Map**

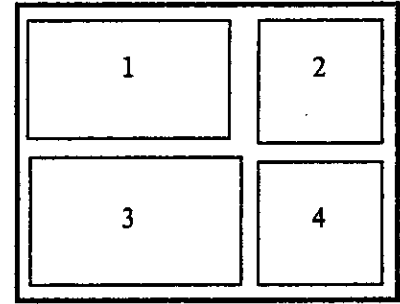
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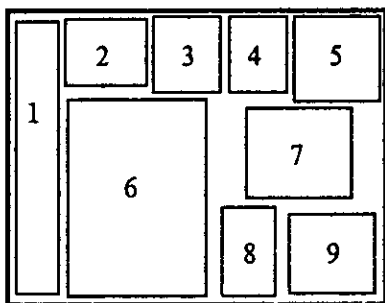
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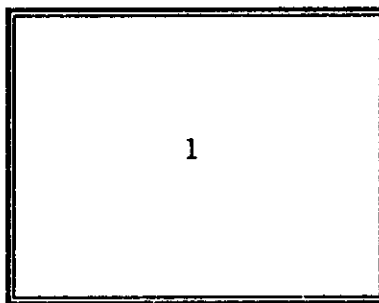
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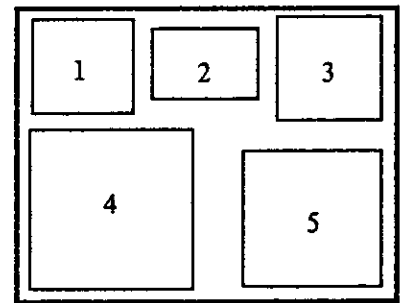
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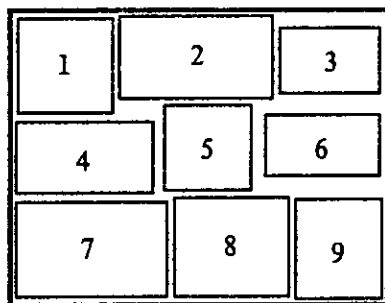
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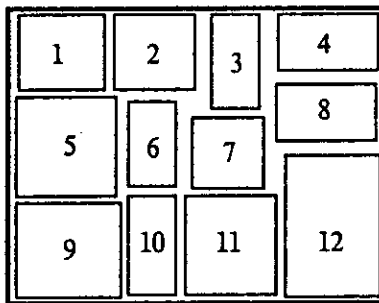
AG



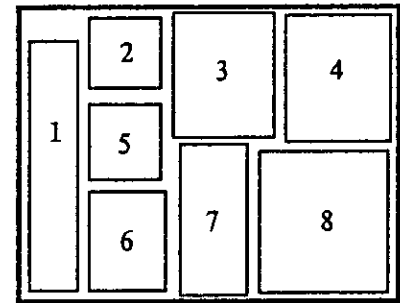
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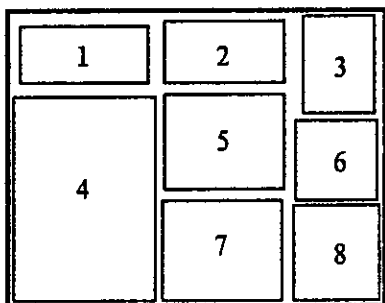
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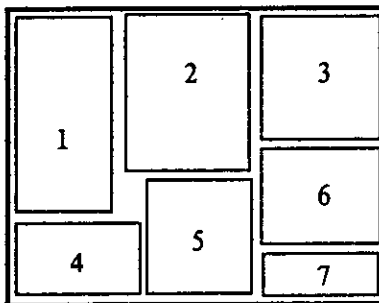
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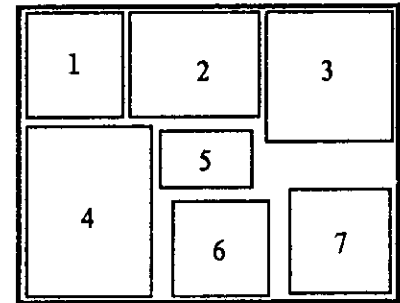
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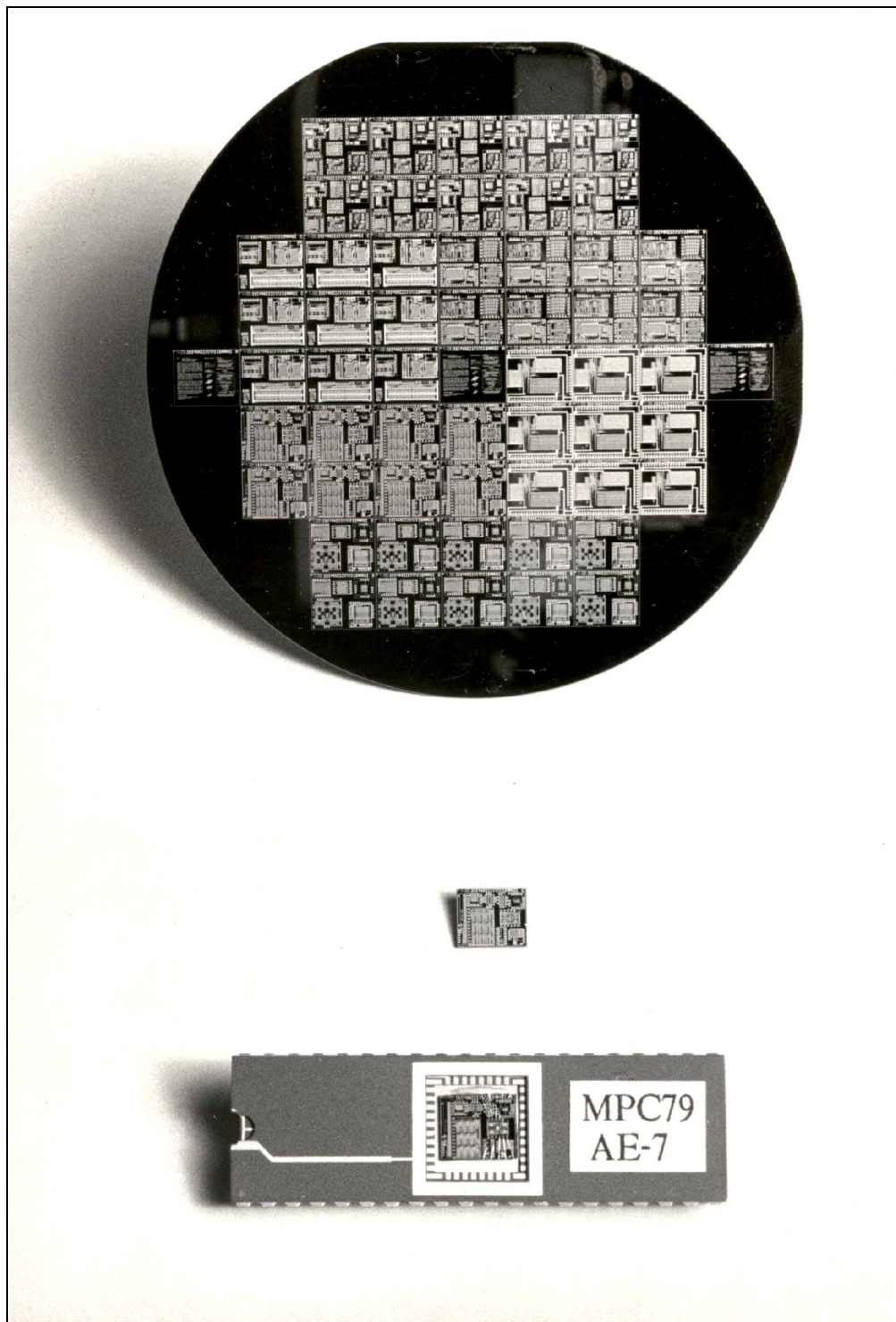


BM



BN





List of wafer-die-project codes and corresponding project ID's

Wafer MPC79A

AB-1 BataliMIT
 AB-2 GramlichMIT
 AB-3 FichtenbaumMIT
 AB-4 KhouryMIT
 AB-5 GoodrichMIT
 AB-6 GrondalskiMIT
 AB-7 PicardMIT
 AB-8 AllenMIT

AC-1 HamiltonMIT
 AC-2 PasemanMIT
 AC-3 GlasserOT
 AC-4 ChuMIT

AD-1 LuhukayUI
 AD-2 HanesUI
 AD-3 AdrianUI
 AD-4 MontoyeUI

AE-1 GuptaCMU
 AE-2 ClassUI
 AE-3 MurrayOT
 AE-4 RogersOT
 AE-5 EbelingCMU
 AE-6 KungCMU
 AE-7 SongCMU
 AE-8 HoeyCMU
 AE-9 KehlOT

AF-1 Schip2

AG-1 WalpCT
 AG-2 KathailMIT
 AG-3 RivestMIT
 AG-4 SnyderOT
 AG-5 GoddeauMIT

AH-1 LHDocl
 AH-2 RHDocl

Wafer MPC79B

BI-1 MacomberSU
 BI-2 GehlbachSU
 BI-3 MarkeeSU
 BI-4 NoiceSU
 BI-5 ElahianSU
 BI-6 AtlasSU
 BI-7 HerndonSU
 BI-8 HannahSU
 BI-9 WulffSU

BJ-1 CampbellCT
 BJ-2 FuCT
 BJ-3 PapachCT
 BJ-4 LiCT
 BJ-5 BartonCT
 BJ-6 CocconiCT
 BJ-7 PursifullCT
 BJ-8 BozzutoCT
 BJ-9 KingsleyCT
 BJ-10 HoCT
 BJ-11 WhitneyCT
 BJ-12 TannerCT

BK-1 MathewsSU
 BK-2 ZarghanSU
 BK-3 FrolikSU
 BK-4 BaskettSU
 BK-5 Clark2SU
 BK-6 OhChinSU
 BK-7 BechtolsheimSU
 BK-8 ClarkSU

BL-1 HellerCT
 BL-2 EatonCT
 BL-3 WatteyneCT
 BL-4 MostellerCT
 BL-5 GrayCT
 BL-6 PinesCT
 BL-7 DerbyCT
 BL-8 PedersenCT

BM-1 LigockiCT
 BM-2 DecuirUCB
 BM-3 FungUCB
 BM-4 LandmanUCB
 BM-5 RumphCT
 BM-6 EllisCT
 BM-7 SequinUCB

BN-1 WatanabeUR
 BN-2 LyonsUR
 BN-3 KedemUR
 BN-4 SohmUR
 BN-5 TiloveUR
 BN-6 UttSU
 BN-7 TarsiSU

BO-1 LHDocl
 BO-2 RHDocl

List of Designers and their Projects

CALTECH:

[Summary of designs from CalTech, updated 4-Dec-79 23:13:17]

BJ-5 BartonCT	Designer: Eric Barton Description: LED array driver Reserved space = 2126 x 2126 microns, Area = 4.52 sq mm
BJ-8 BozzutoCT	Designer: Rick Bozzuto Description: Pulse width to binary converter Reserved space = 2120 x 1288 microns, Area = 2.73 sq mm
BJ-1 CampbellCT	Designer: James Campbell Description: Logical processing unit with internal registers Reserved space = 1856 x 1704 microns, Area = 3.16 sq mm
BJ-6 CocconiCT	Designer: Alan Cocconi Description: Array processor Reserved space = 1896 x 1074 microns, Area = 2.04 sq mm
BL-7 DerbyCT	Designer: Howard Derby Description: Associative Memory Reserved space = 2170 x 2566 microns, Area = 5.57 sq mm
BL-2 EatonCT	Designer: Steve Eaton Description: Counter/adder Reserved space = 2500 x 1376 microns, Area = 3.44 sq mm
BM-6 EllisCT	Designer: Mike Ellis Description: Stepping motor controller Reserved space = 2000 x 2500 microns, Area = 5.00 sq mm
BJ-2 FuCT	Designer: Sai Wai Fu Description: Square root generator Reserved space = 1750 x 1626 microns, Area = 2.85 sq mm
BL-5 GrayCT	Designer: Moshe Gray Description: Array processor Reserved space = 2534 x 2082 microns, Area = 5.28 sq mm
BL-1 HellerCT	Designer: Jack Heller Description: Digital filter Reserved space = 2708 x 1326 microns, Area = 3.59 sq mm
BJ-10 HoCT	Designer: Kuo Ting Ho Description: 10 bit rate multiplier Reserved space = 2120 x 1110 microns, Area = 2.35 sq mm
BJ-9 KingsleyCT	Designer: Chris Kingsley Description: Serial Multiplier Reserved space = 2200 x 2064 microns, Area = 4.54 sq mm

CALTECH (cont.):

BJ-4 LiCT	Designer: Peggy Pey-Yun Li Description: Two's-complement pipeline multiplier Reserved space = 2176 x 1326 microns, Area = 2.89 sq mm
BM-1 LigockiCT	Designer: Terry Ligocki Description: Scan converter chip Reserved space = 2000 x 4108 microns, Area = 8.22 sq mm
BL-4 MostellerCT	Designers: Rick Mosteller, Greg Eflan, Dick Lang Description: Stack-oriented microprocessor Reserved space = 4300 x 2996 microns, Area = 12.88 sq mm
BJ-3 PapachCT	Designer: A.C. Papachristidis Description: Magnitude comparator Reserved space = 2000 x 1126 microns, Area = 2.25 sq mm
BL-8 PedersenCT	Designer: Bruce Pedersen Description: Asynchronous FIFO Reserved space = 1896 x 2000 microns, Area = 3.79 sq mm
BL-6 PinesCT	Designer: Elliot Pines Description: Expandable clocking pattern generator chip Reserved space = 1780 x 1780 microns, Area = 3.17 sq mm
BJ-7 PursifullCT	Designer: Ralph Pursiful Description: Self-Timed Queue Reserved space = 1590 x 1590 microns, Area = 2.53 sq mm
BM-5 RumphCT	Designer: David Rumph Description: DMA controller Reserved space = 2442 x 2242 microns, Area = 5.47 sq mm
BJ-12 TannerCT	Designers: John Tanner and Richard Segal Description: Single wire interface for a Manipulator (SWIM) Reserved space = 2000 x 3000 microns, Area = 6.00 sq mm
AG-1 WalpCT	Designer: Pat Walp Description: Array processor Reserved space = 2126 x 2050 microns, Area = 4.36 sq mm
BL-3 WatteyneCT	Designers: Thierry Watteyne and Martine Savalle Description: BCD/binary comparator Reserved space = 2100 x 1600 microns, Area = 3.36 sq mm
BJ-11 WhitneyCT	Designer: Telle Whitney Description: Address translator Reserved space = 1940 x 2126 microns, Area = 4.12 sq mm

Carnegie-Mellon University:

[Summary of designs from CMU, updated 4-Dec-79 23:13:17]

- AE-5 EbelingCMU Designer: Carl Ebeling
Description: Rebound Sorter
Reserved space = 1856 x 1856 microns, Area = 3.44 sq mm
- AE-1 GuptaCMU Designer: Satish Gupta
Description: Video Buffer
Reserved space = 1006 x 5668 microns, Area = 5.70 sq mm
- AE-8 HoeyCMU Designer: Dan Hoey
Description: Experimental Adder
Reserved space = 1188 x 1976 microns, Area = 2.35 sq mm
- AE-6 KungCMU Designers: H. T. Kung, S. W. Song
Description: Image Processing Chip
Reserved space = 4160 x 2948 microns, Area = 12.26 sq mm
- AE-7 SongCMU Designer: Siang W Song
Description: A small database machine
Reserved space = 2224 x 1954 microns, Area = 4.35 sq mm

MIT:

[Summary of designs from MIT, updated 4-Dec-79 23:13:17]

- AB-8 AllenMIT Designers: Don Allen, Jerry Burchfiel
Description: Variable Length Field Decoder
Reserved space = 2218 x 2484 microns, Area = 5.51 sq mm
- AB-1 BataliMIT Designer: John Batali
Description: Zero-Crossing Detector for Image Processing
Reserved space = 2644 x 1738 microns, Area = 4.60 sq mm
- AC-4 ChuMIT Designers: Tam-Anh Chu, Nhi-Anh Chu, Steve McCormick
Description: Second order digital filter stage
Reserved space = 6146 x 2278 microns, Area = 14.00 sq mm
- AB-3 FichtenbaumMIT Designer: Matt Fichtenbaum
Description: A digital pulse rate monitor
Reserved space = 2500 x 2500 microns, Area = 6.25 sq mm
- AG-5 GoddeauMIT Designers: David Goddeau, Jonathan Sieber, Chris Terman
Description: A first-in, priority-out buffer
Reserved space = 2928 x 2954 microns, Area = 8.65 sq mm

MIT (cont.):

- AB-5 GoodrichMIT Designer: Earl Goodrich
Description: CRT controller
Reserved space = 1856 x 1520 microns, Area = 2.82 sq mm
- AB-2 GramlichMIT Designers: Wayne Gramlich, Carl Seaquist
Description: A writable PLA in which the programming of the AND and OR planes is defined by contents of static RAM cells. Also can program feedback loops to form finite state machines.
Reserved space = 1524 x 1906 microns, Area = 2.90 sq mm
- AB-6 GrondalskiMIT Designer: Robert Grondalski
Description: Writeable PLA
Reserved space = 2200 x 2200 microns, Area = 4.84 sq mm
- AC-1 HamiltonMIT Designer: Brian Hamilton
Description: Digital Alarm Clock
Reserved space = 2500 x 2500 microns, Area = 6.25 sq mm
- AG-2 KathailMIT Designers: Vinod Kathail, Keshav Pingali
Description: an interpreter for mapping programs onto a data flow computer
Reserved space = 1590 x 2228 microns, Area = 3.54 sq mm
- AB-4 KhouryMIT Designer: John Khoury
Description: Up-Down counter with programmable modulus
Reserved space = 2000 x 1726 microns, Area = 3.45 sq mm
- AC-2 PasemanMIT Designer: Bill Paseman
Description: Music Synthesizer
Reserved space = 4126 x 2842 microns, Area = 11.73 sq mm
- AB-7 PicardMIT Designer: Len Picard
Description: Variable format field extractor and compactor
Reserved space = 2000 x 1688 microns, Area = 3.38 sq mm
- AG-3 RivestMIT Designers: Ron Rivest, Len Adleman, Adi Shamir
Description: Section of a Multiplier
Reserved space = 2250 x 2250 microns, Area = 5.06 sq mm

Stanford University:

[Summary of designs from Stanford University, updated 4-Dec-79 23:13:17]

BI-6 AtlasSU	Designers: Les Atlas, Doug Galbraith Description: This project is an neural-stim. interval timer Reserved space = 2478 x 1378 microns, Area = 3.41 sq mm
BK-4 BaskettSU	Designer: Forest Baskett Description: This project is an Ethernet synchronizer Reserved space = 2240 x 2720 microns, Area = 6.09 sq mm
BK-7 BechtolsheimSU	Designers: Andy Bechtolsheim, Thomas Gross Description: A parallel search table for log arithmetic Reserved space = 1514 x 3180 microns, Area = 4.81 sq mm
BK-5 Clark2SU	Designer: Jim Clark Description: This project is a self-timed clock element Reserved space = 1606 x 1688 microns, Area = 2.71 sq mm
BK-8 ClarkSU	Designer: Jim Clark Description: This project is a simple graphics ALU Reserved space = 2976 x 2764 microns, Area = 8.23 sq mm
BI-5 ElahianSU	Designers: Kamran Elahian, Fred Basham Description: This project is a UART line speed determiner Reserved space = 1856 x 1856 microns, Area = 3.44 sq mm
BK-3 FrolikSU	Designers: Bill Frolik, Roderick Young Description: This project is a digital timer Reserved space = 2120 x 2684 microns, Area = 5.69 sq mm
BI-2 GehlbachSU	Designers: Steve Gehlbach, Joe Sharp, Bill Jansen Description: This project is a fast 16-input adder Reserved space = 3180 x 1856 microns, Area = 5.90 sq mm
BI-8 HannahSU	Designers: Peter Eichenberger, Marc Hannah Description: This project is a rectangle generator Reserved space = 2386 x 2140 microns, Area = 5.11 sq mm
BI-7 HerndonSU	Designers: Matt Herndon, Jeff Thorson Description: This project is a typesetting machine Reserved space = 3170 x 2000 microns, Area = 6.34 sq mm
BI-1 MacomberSU	Designers: Scott Macomber, Bob Clark Description: This project is a parallel/serial multiplier Reserved space = 2000 x 2000 microns, Area = 4.00 sq mm
BI-3 MarkeeSU	Designers: Pat Markee, Irene Watson Description: This project is a digital clock Reserved space = 2120 x 1424 microns, Area = 3.02 sq mm

BK-1 MathewsSU	Designers: Rob Mathews, John Newkirk Description: This project is the infamous Buffalo chip Reserved space = 5180 x 1134 microns, Area = 5.87 sq mm
BI-4 NoiceSU	Designers: David Noice, Neil Midkiff Description: This project is a multiplier/divider Reserved space = 2888 x 1576 microns, Area = 4.55 sq mm
BK-6 OhChinSU	Designers: Soo-Young Oh, Dae-Je Chin Description: An automatic thermostat time controller Reserved space = 2120 x 1700 microns, Area = 3.60 sq mm
BN-7 TarsiSU	Designers: Mike Tarsi, Nagatsugu Yamanouchi Description: This project is a multifunction digital clock Reserved space = 2140 x 2276 microns, Area = 4.87 sq mm
BN-6 UttSU	Designers: Steve Utt, Shalom Ackelsberg Description: This project is part of a pancreas prosthesis Reserved space = 2000 x 2000 microns, Area = 4.00 sq mm
BI-9 WulffSU	Designers: Bob Wulff, Tom Bennett Description: This project is a bit slice of a multiplier Reserved space = 2120 x 1856 microns, Area = 3.93 sq mm
BK-2 ZarghanSU	Designers: Bahman Zargham, Jerry Huck Description: This project is a multiplexed communications link Reserved space = 1590 x 1550 microns, Area = 2.46 sq mm

U.C.Berkeley:

[Summary of designs from U.C.Berkeley, updated 4-Dec-79 23:13:17]

BM-2 DecuirUCB	Designers: J. Decuir, C.H.Sequin Description: Squareroot of 3 approximator for radix-3 block in FFT computer Reserved space = 2650 x 3278 microns, Area = 8.69 sq mm
BM-3 FungUCB	Designers: W.-C. Fung, C.H.Sequin Description: General purpose barrel shifter for straggled , pipelined data in an FFT computer Reserved space = 2484 x 2650 microns, Area = 6.58 sq mm
BM-4 LandmanUCB	Designer: Howard A. Landman Description: This project is a reprogrammable PLA, with 8 each inputs, pterms, and (tri-state) outputs. Reserved space = 2600 x 1590 microns, Area = 4.13 sq mm
BM-7 SequinUCB	Designer: Carlo H. Sequin Description: Dual 16-stage FIFO with double rail signalling Reserved space = 2460 x 980 microns, Area = 2.41 sq mm

Univ. of Illinois:

[Summary of designs from University of Illinois, updated 4-Dec-79 23:13:17]

- AD-3 AdrianUI Designers: Frank Adrian, Nick Fiduccia, Bud Pflug
Description: Functional equivalent of AMD 2901 ALU
to compare MOS, TTL
Reserved space = 2710 x 4388 microns, Area = 11.89 sq mm
- AE-2 ClassUI Designers: Class
Description: Twos complement 4 x 4 array multiplier
Reserved space = 1714 x 1498 microns, Area = 2.57 sq mm
- AD-2 HanesUI Designers: Larry Hanes, Dave Yen
Description: Twos complement array divider
Reserved space = 2616 x 2636 microns, Area = 6.90 sq mm
- AD-1 LuhukayUI Designer: Joe Luhukay
Description: Pipelined multiplier, registers also used for testability
Reserved space = 2572 x 4140 microns, Area = 10.65 sq mm
- AD-4 MontoyeUI Designers: Bob Montoye, Al Casavant
Description: Carry lookahead adder
(soln. proposed by Gajski and Kung)
Reserved space = 2628 x 2626 microns, Area = 6.90 sq mm

Univ. of Rochester:

[Summary of designs from University of Rochester, updated 4-Dec-79 23:13:17]

- BN-3 KedemUR Designers: Gershon Kedem and Michel Denber
Description: Infinite precision multiplier
Reserved space = 2698 x 2786 microns, Area = 7.52 sq mm
- BN-2 LyonsUR Designer: Bob Lyons
Description: Programmable Frequency Generator
Reserved space = 2748 x 2276 microns, Area = 6.25 sq mm
- BN-4 SohmUR Designers: Larry Sohm, Pat Chan, Bill Notowitz
Description: Digital Phase lock loop
Reserved space = 3610 x 2634 microns, Area = 9.51 sq mm
- BN-5 TiloveUR Designers: Bob Tilove, Jarek Rossignac
Description: This is a bit slice coordinate transformer
Reserved space = 1934 x 1326 microns, Area = 2.56 sq mm
- BN-1 WatanabeUR Designer: Yuki Watanabe
Description: Sorter slice
Reserved space = 2008 x 2240 microns, Area = 4.50 sq mm

Other places:

[Summary of designs from Other places, updated 4-Dec-79 23:13:17]

AC-3 GlasserOT	Designer: Lance Glasser, MIT, via Univ. of Washington Description: Modulo-6 counter for dice game Reserved space = 1486 x 808 microns, Area = 1.20 sq mm
AE-9 KehlOT	Designers: Ted Kehl, Ram Rao, Ed Lazowska, Univ. of Washington, Seattle Description: Address intercept logic for microcomputer Reserved space = 1818 x 1782 microns, Area = 3.24 sq mm
AE-3 MurrayOT	Designer: John Murray, Univ. of Colorado, Colorado Springs, via Univ. of Washington Description: 3-bit identity comparator Reserved space = 1512 x 1642 microns, Area = 2.48 sq mm
AE-4 RogersOT	Designer: Mike Rogers, Univ. of Bristol, Bristol, England, via Univ. of Washington Description: Simple 3-bit enciphering/deciphering chip. Reserved space = 1248 x 1708 microns, Area = 2.13 sq mm
AF-1 Schip2	Designers: Gerry Sussman, Jack Holloway, Guy Steele, Alan Bell MIT-AI Laboratory/Xerox PARC-SSL Description: Lisp Microprocessor Reserved space = 5926 x 7548 microns, Area = 44.73 sq mm
AG-4 SnyderOT	Designer: Larry Snyder, Yale University, via University of Washington Description: A binary tree processor that computes boolean functions, with inputs at the leaves and output at the root. Reserved space = 3418 x 3430 microns, Area = 11.72 sq mm
AH-1 LhDoc1	Designer: Lynn Conway Description: This is the Left Half of a "document chip", describing MPC79, for use on MPC79A wafers. Reserved space = 2918 x 4688 microns, Area = 13.68 sq mm
BO-1 LhDoc2	This is the Left Half of the "document chip", for use on MPC79B wafers. Reserved space = 2918 x 4688 microns, Area = 13.68 sq mm
AH-2 RHDoc1	Designer: Lynn Conway Description: This is the Right Half of a "document chip", flowcharting MPC79, for use on MPC79A wafers. Reserved space = 3548 x 4424 microns, Area = 15.70 sq mm
BO-2 RHDoc2	This is the Right Half of the "document chip", for use on MPC79B wafers. Reserved space = 3548 x 4424 microns, Area = 15.70 sq mm













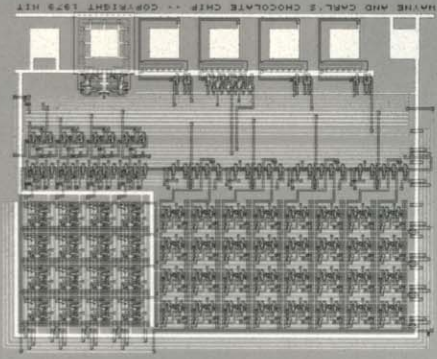




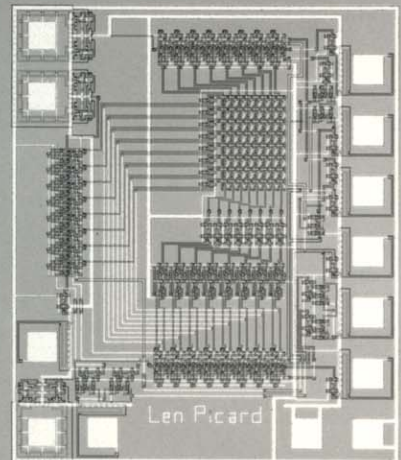
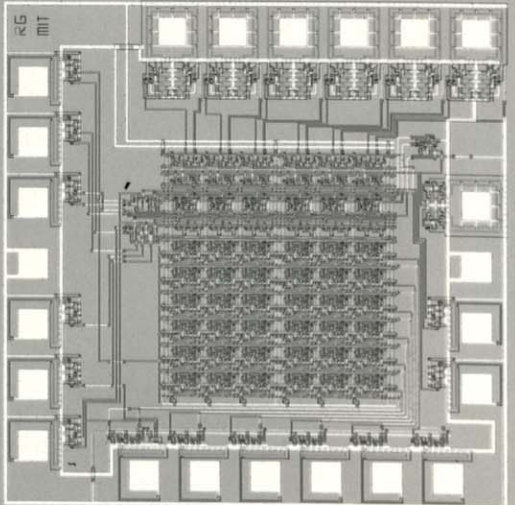
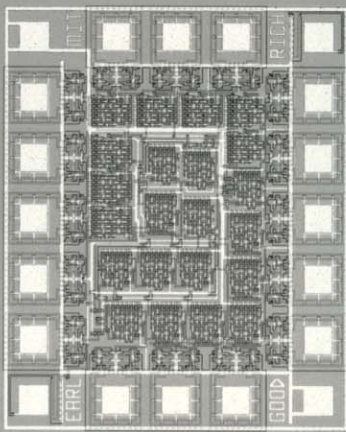
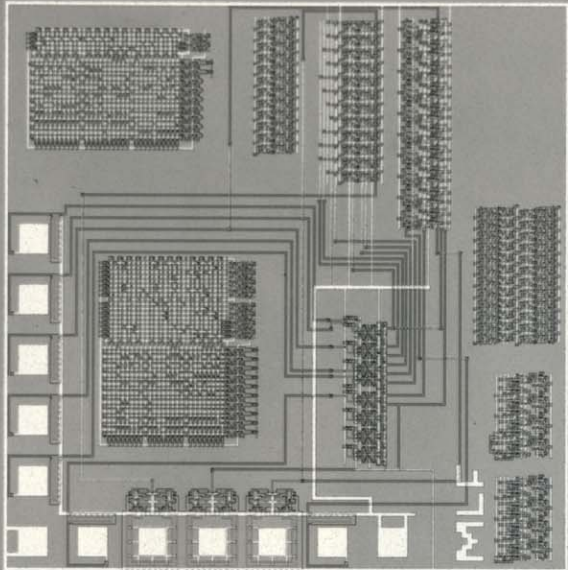






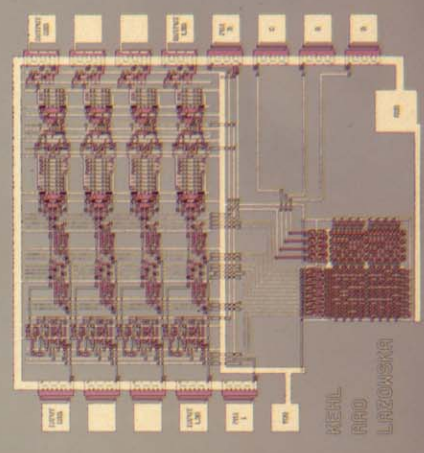
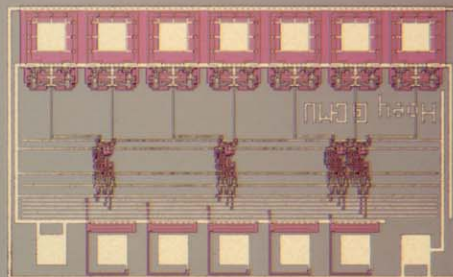
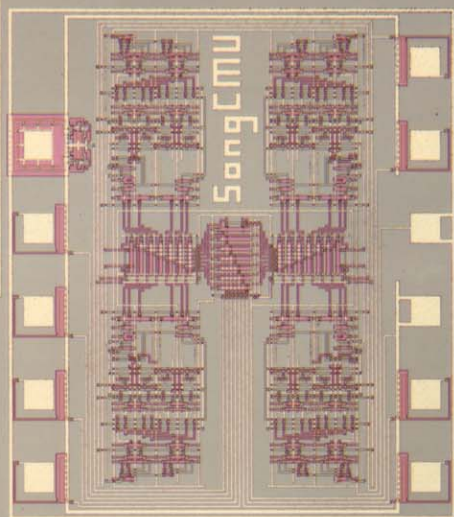
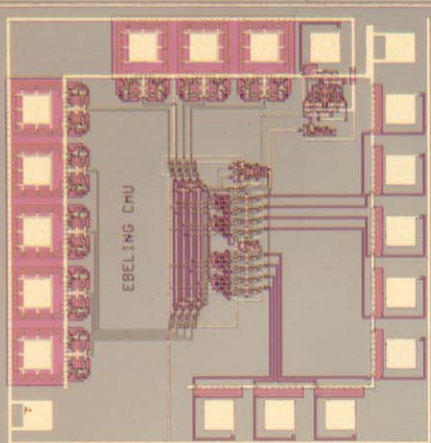
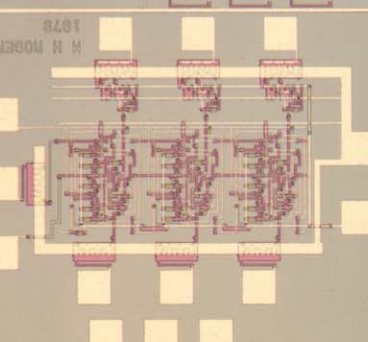
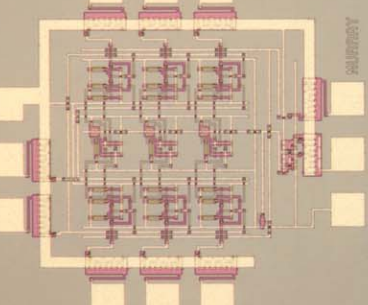
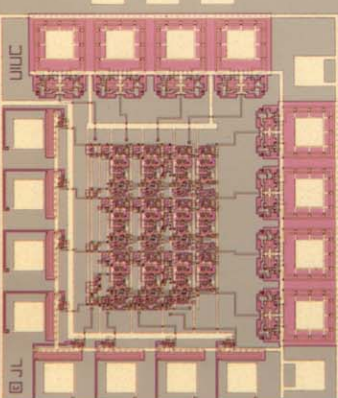
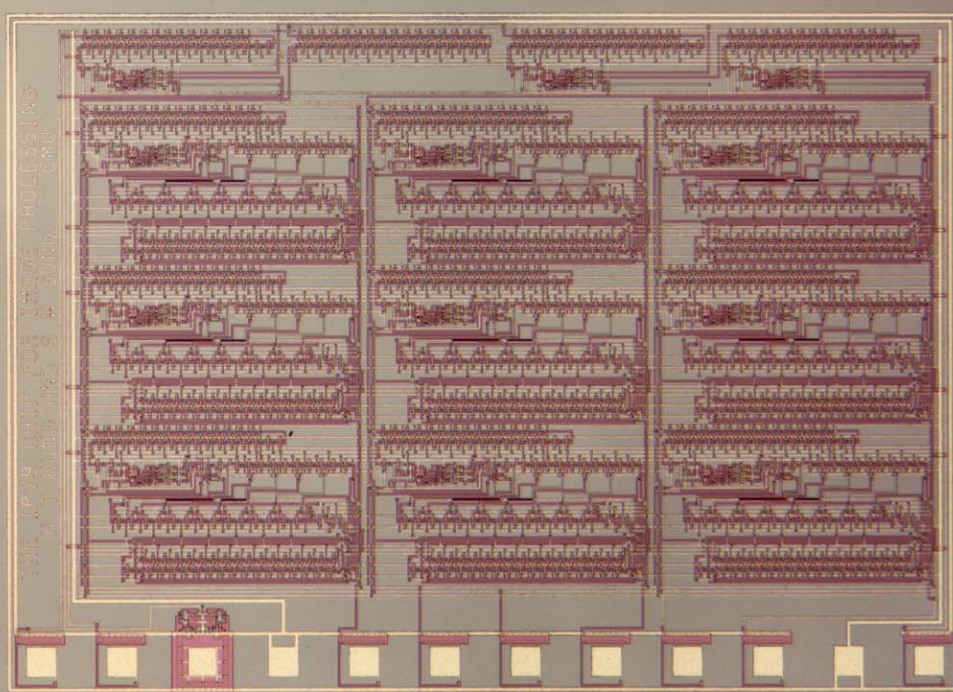
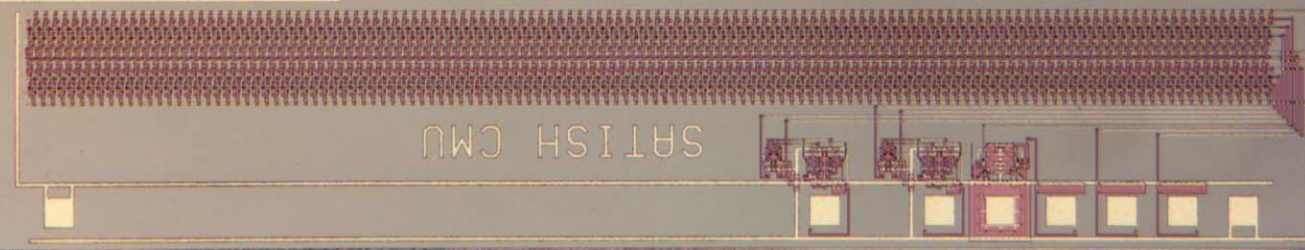



WATKINS AND COWLEY'S CHOCOLATE CHIP -- COPYRIGHT 1975 HLT

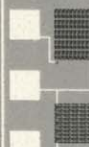


MPC79AE

1979 PLASMA/REACT Chip
New Plan: New MPC/SSL
Data Comp. W/PLANET
Data Comp. W/PLANET
Data Comp. W/PLANET



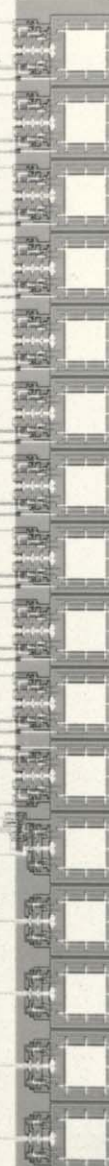
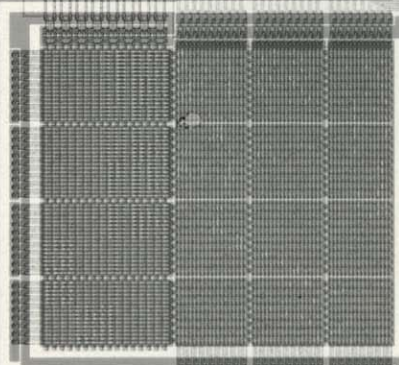
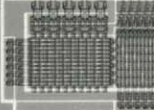
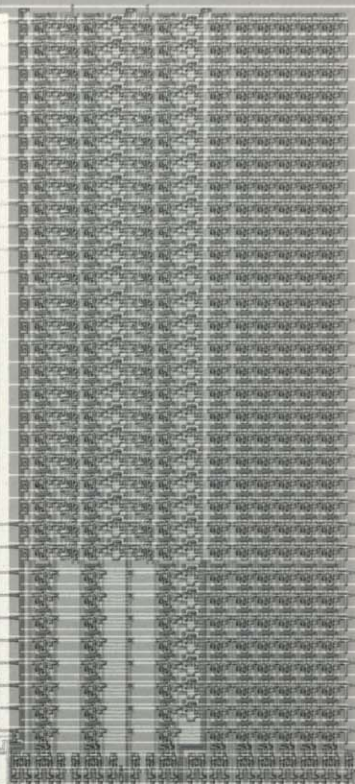
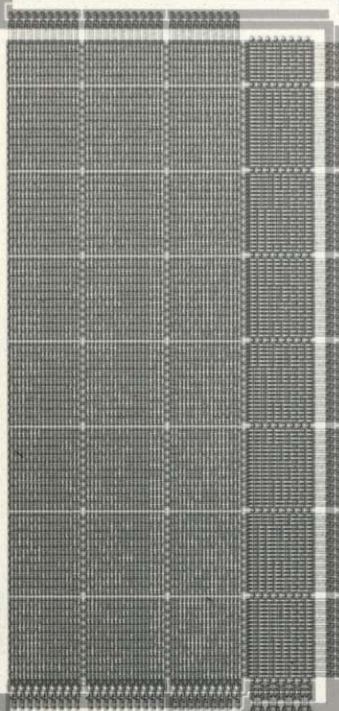
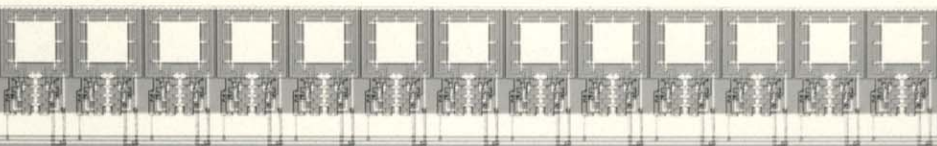
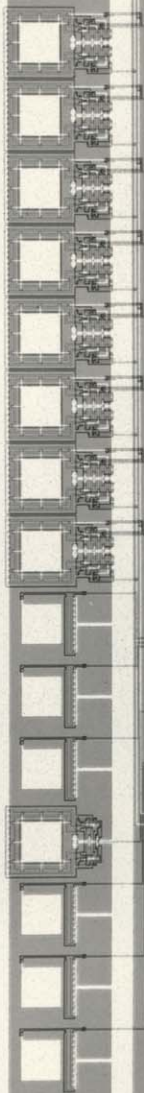
F



MPC79AF

ARM7TDMI-S (ARM7TDMI-S)
ARM7TDMI-S (ARM7TDMI-S)
ARM7TDMI-S (ARM7TDMI-S)
ARM7TDMI-S (ARM7TDMI-S)

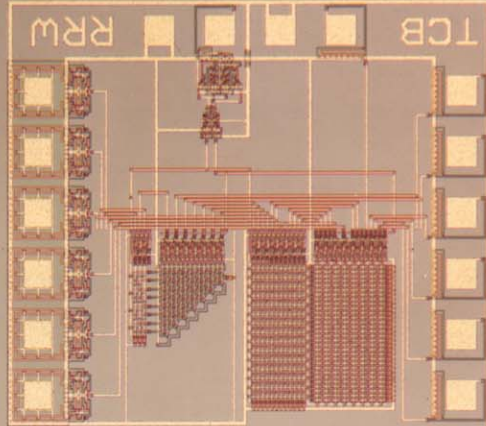
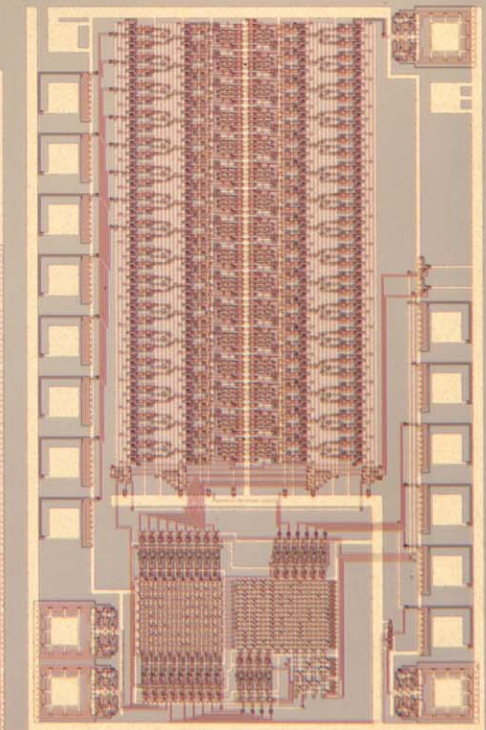
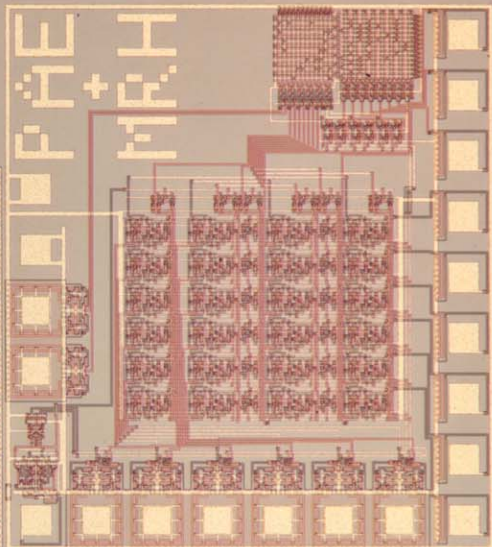
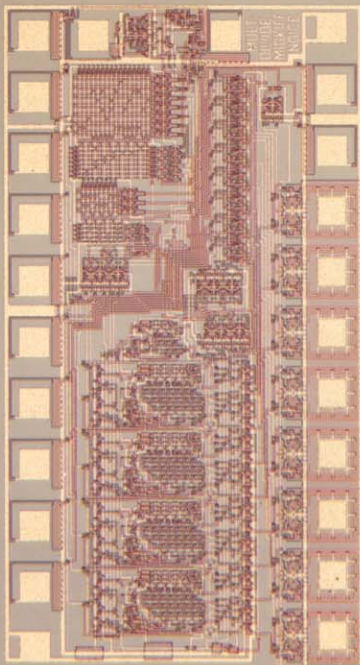
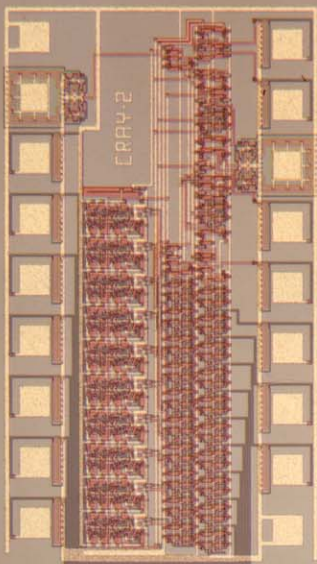
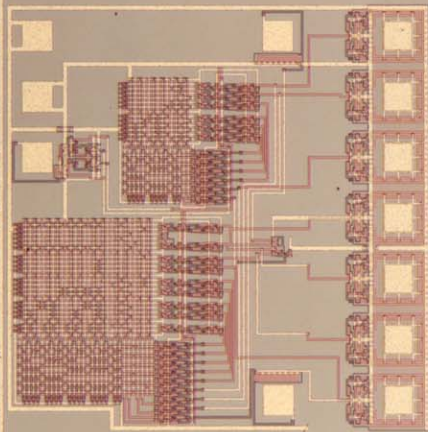
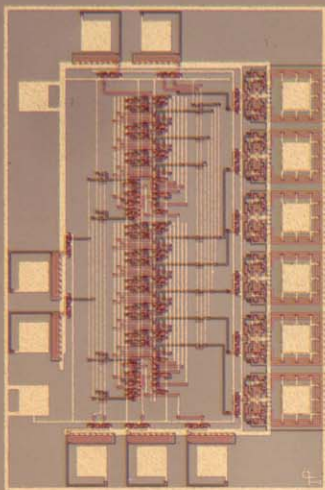
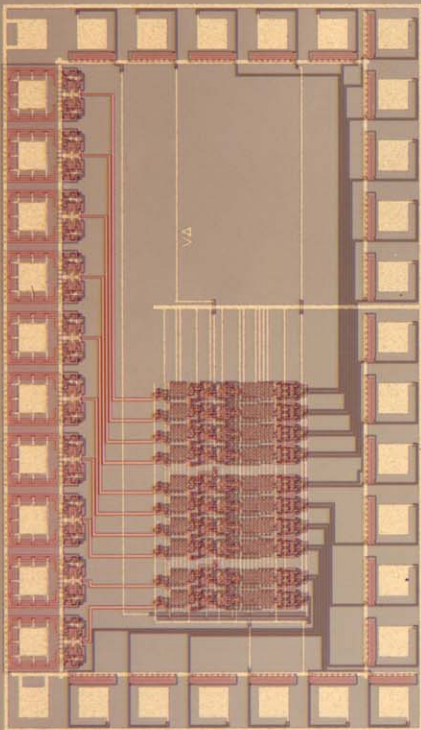
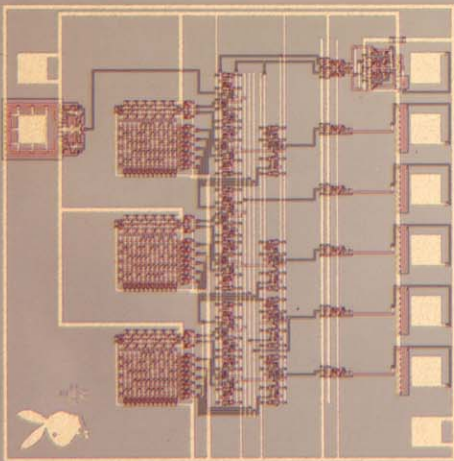
PCF +
CUT +
MET +
POL +



MPC7981

100% AVAILABILITY
100% DELIVERY
100% SUPPORT

DF + CUT + MET + POL +



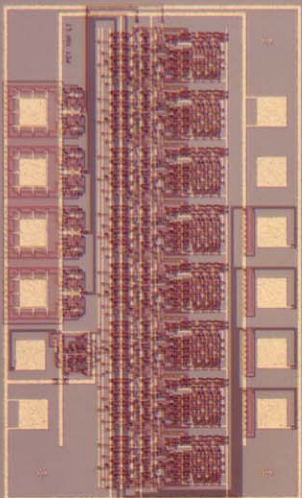
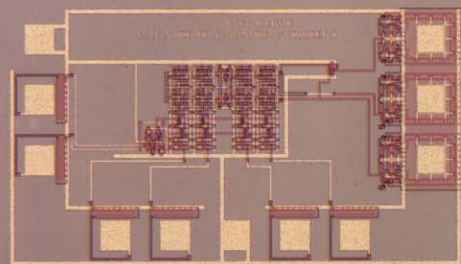
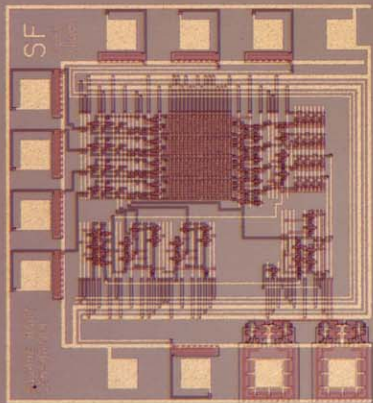
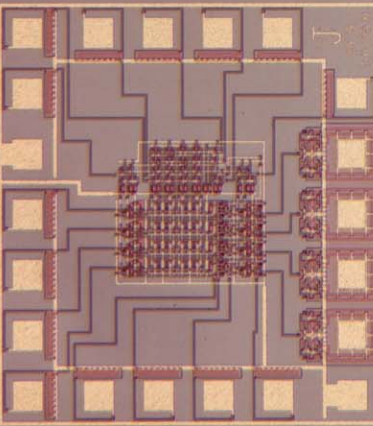
MPC79BJ

100% TRANSISTORS
100% METAL
100% POLY
100% SILICON
100% GLASS

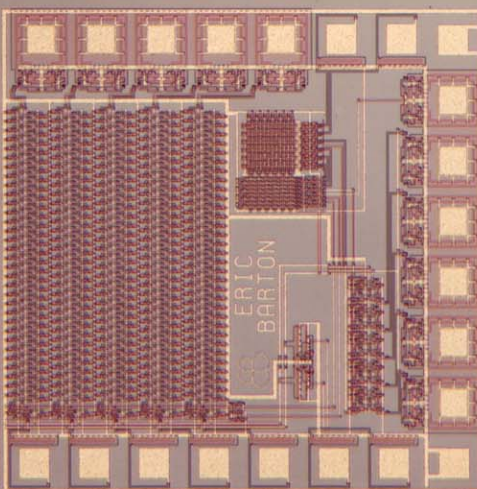
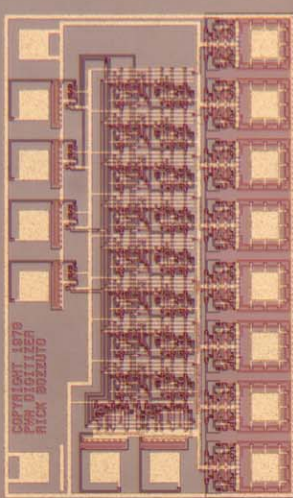
DUF + MET + POL +

100% TRANSISTORS
100% METAL
100% POLY
100% SILICON
100% GLASS

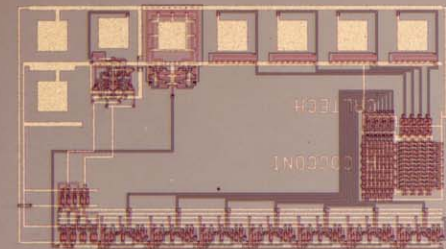
100% TRANSISTORS
100% METAL
100% POLY
100% SILICON
100% GLASS



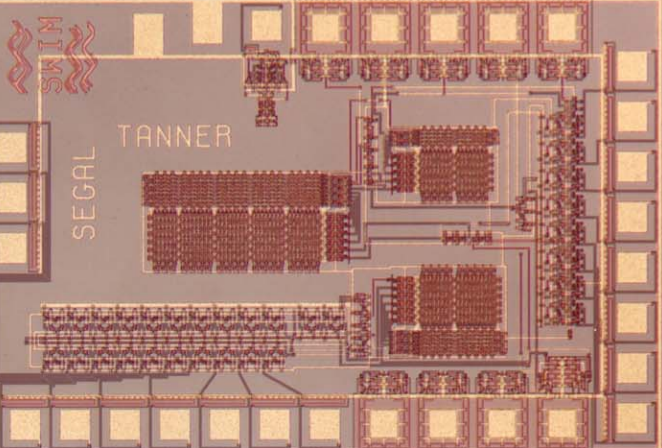
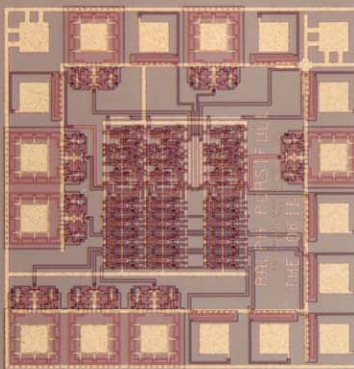
OPTIONAL 1979
OPTIONAL 1979
OPTIONAL 1979



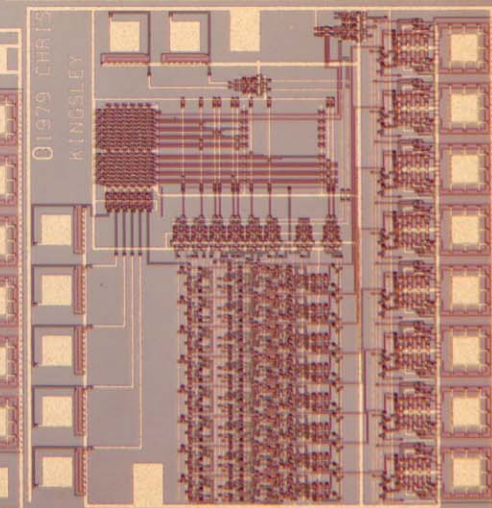
ERIC
BARTON



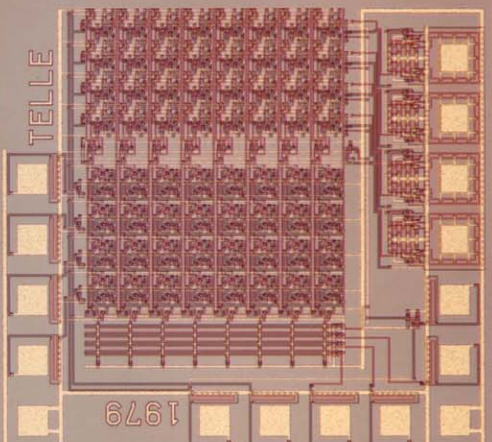
COCCONI
TECH



SWIM
SEGAL
TANNER



01979 CHAIRS
KINGSLEY



TELLE
1979





















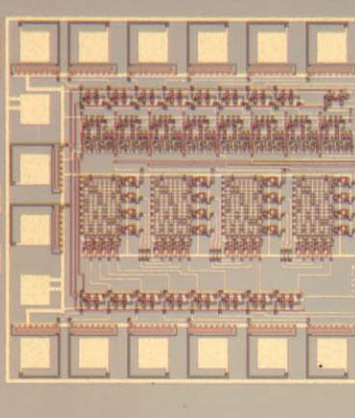
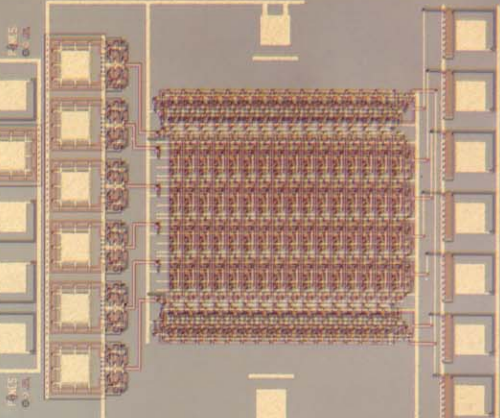
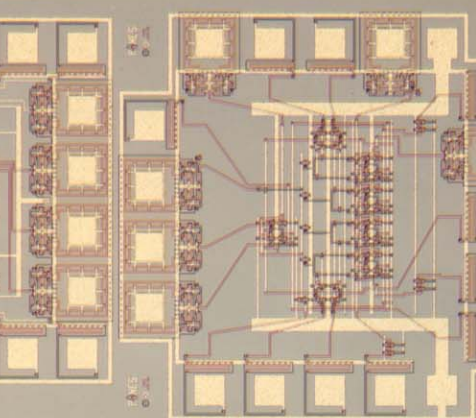
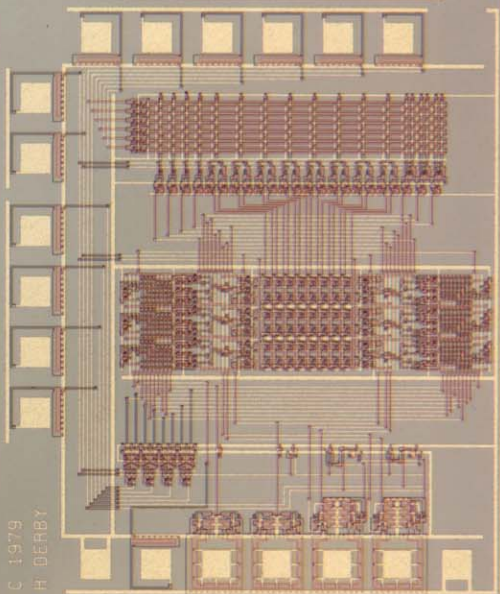
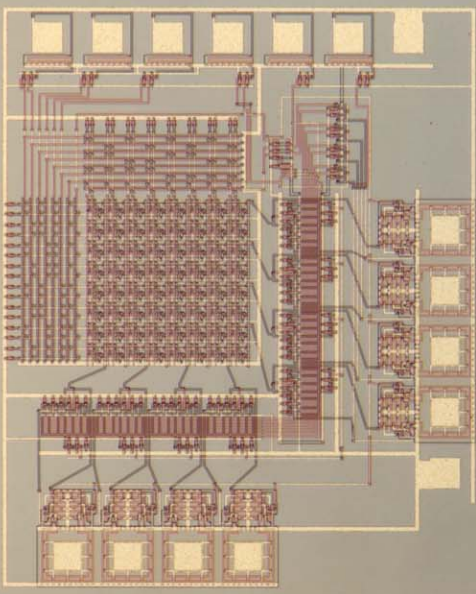
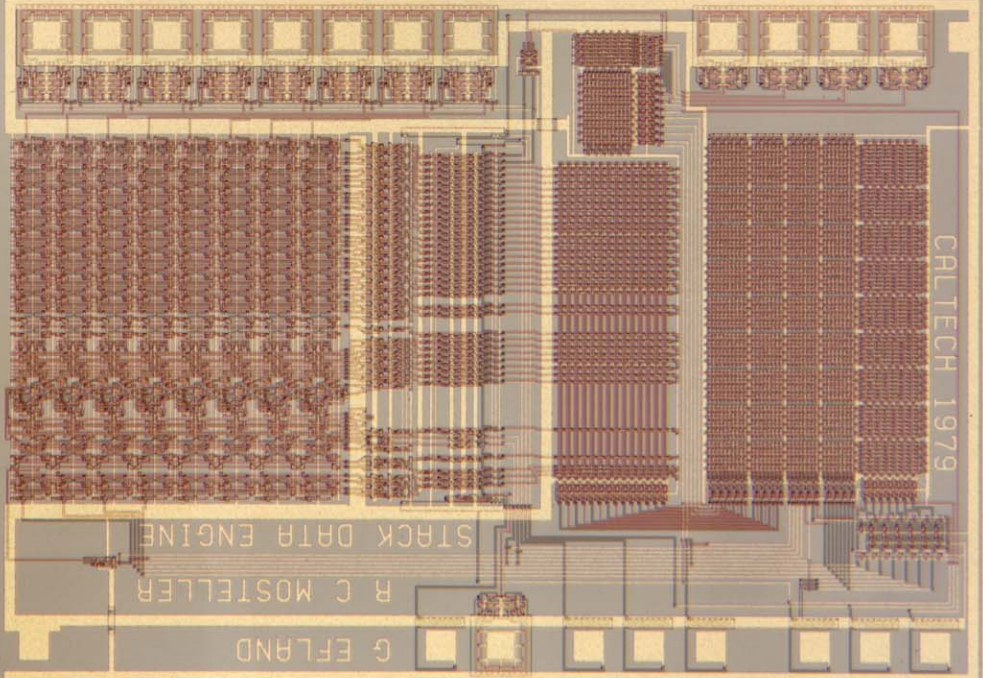
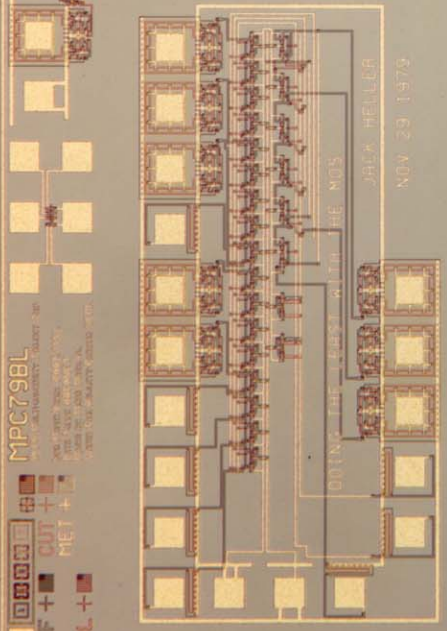

A detailed micrograph of the BF/Ry chip. The chip features a central array of logic blocks, surrounded by peripheral control logic and memory structures. The text "BF / Ry" is printed on the right side of the chip.

Geometry Engine
© 1979 James Clark

MPC798L

WILLIAM H. HARRIS, JR. - DESIGNER
JAMES E. HARRIS, JR. - DESIGNER
JOHN E. HARRIS, JR. - DESIGNER
JOHN E. HARRIS, JR. - DESIGNER

OUT +
MET +
POL +



MPC798N

ANALOGIC PART 79

© 1988 Analogic Corporation
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Printed in U.S.A.

WDF + CUT + MET + PCL +

PC
LRS

XUKI

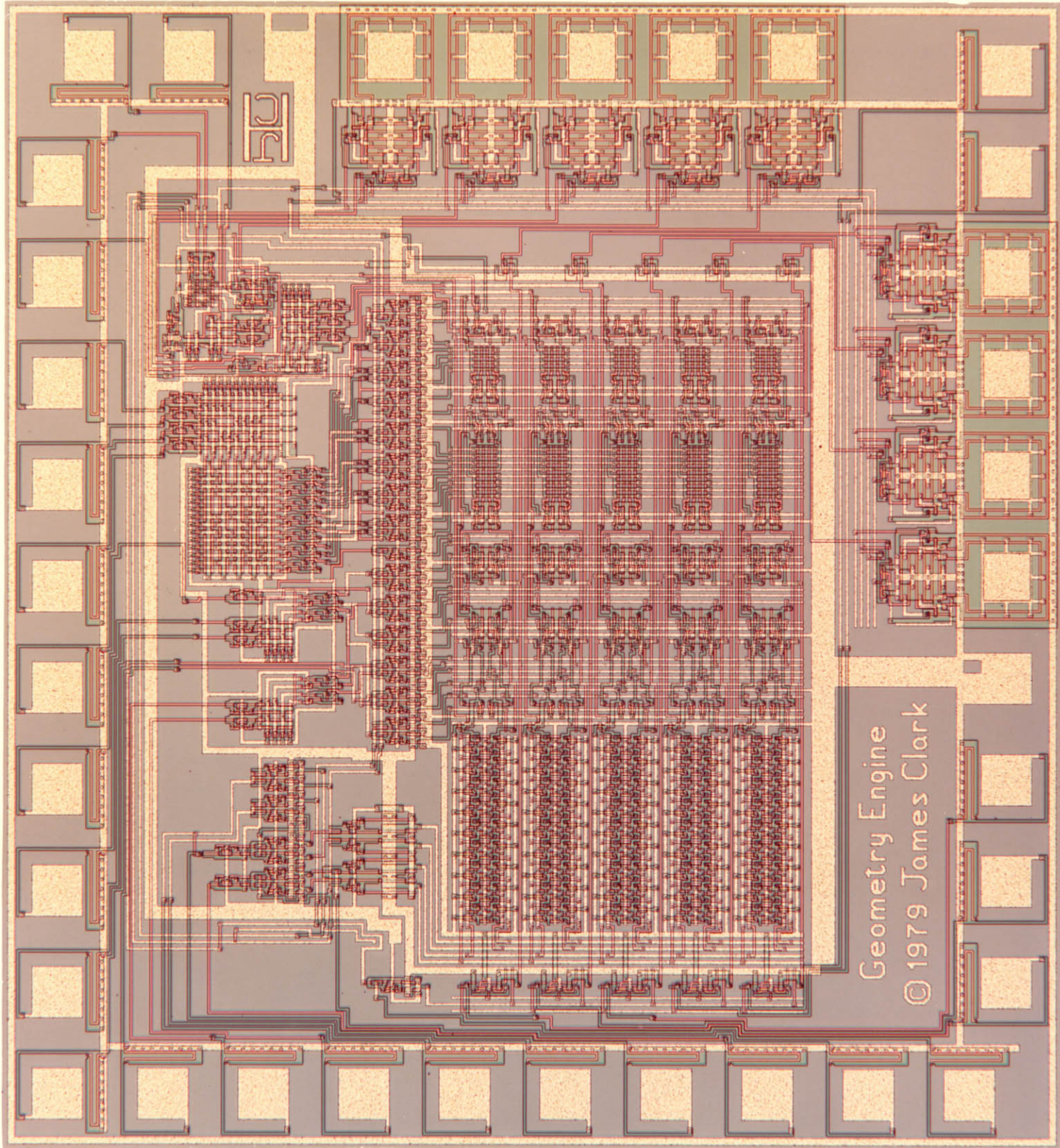
3 X DMS
CUT

S

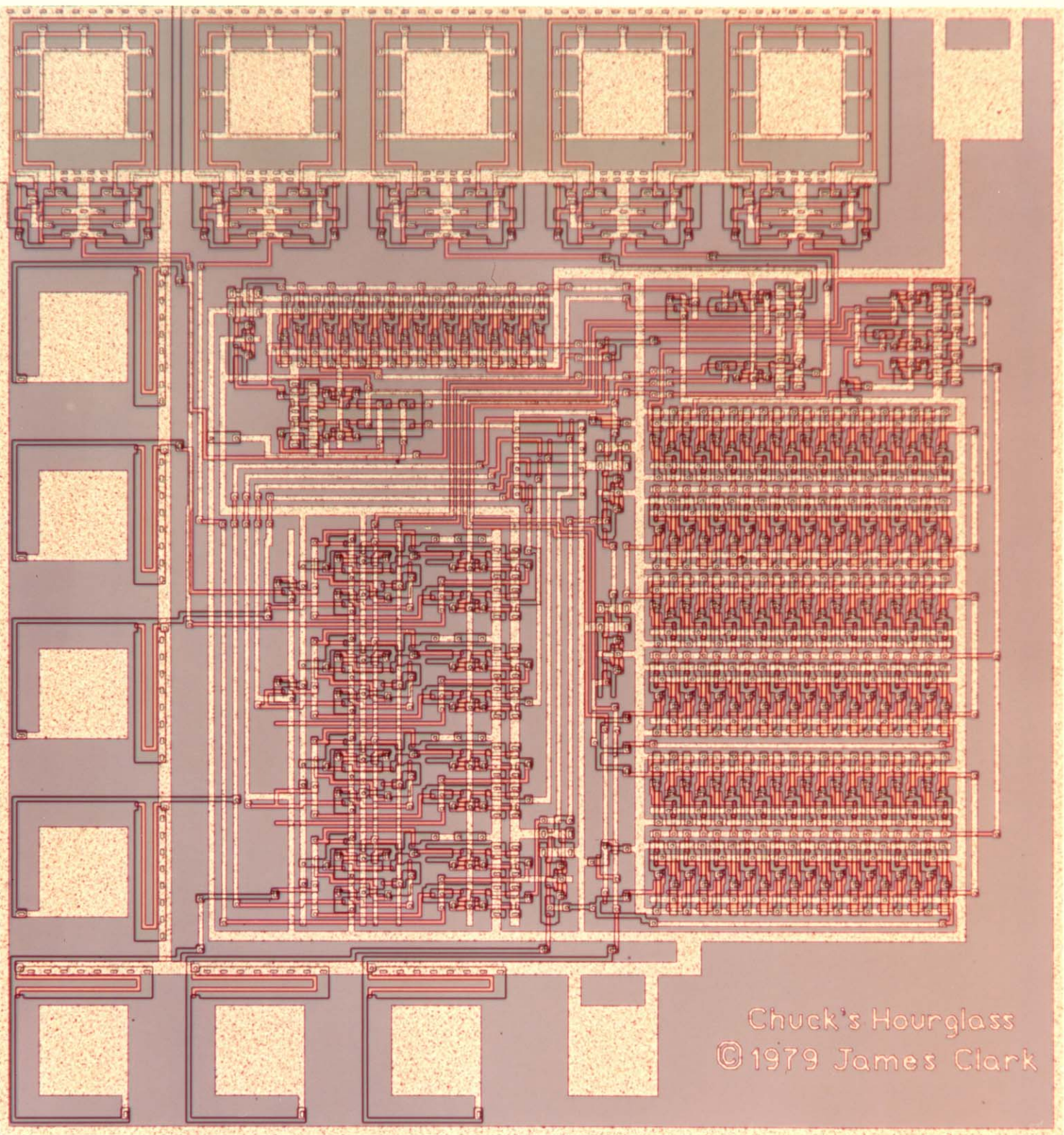
T
N

R₂

2



Geometry Engine
© 1979 James Clark



Chuck's Hourglass
©1979 James Clark

MELGAR PHOTOGRAPHERS
2971 Corvin Drive, Santa Clara, CA 95051
February 28, 1980

To the MPC79 participants:

Melgar Photographers have recently taken photomicrographs of each of the die-types in the MPC79 Multiproject Chip Set. Prints of these photos can now be ordered by using the attached order form.

The photos can be ordered in color, or in black and white, in standard sizes ranging from 5"x7" up to 20"x24". Prices as a function of size and type are listed on the order form. We can also make prints as large as 40"x60"! (Contact us for price quotes on sizes larger than 20"x24").

The order form indicates two further options:

(i) Full Die Photographs: Full Die Photographs include the Starting Frame, and all projects within the Starting Frame, for a given Die-Type. These can be ordered by Die-Code (AB, AC, - - -, etc.).

(ii) Individual Project Enlargements: These are produced using the original Full-Die negatives. Such enlargements of individual projects can be ordered by Project-Code (AB-1, AB-2, - - -, etc.).

A map of the MPC79 Die-Types, and a list of the Project-Codes and corresponding Project ID's is given on the reverse side of this letter, for your convenience in determining the correct Die-Codes and Project-Codes for your order.

We will make the individual project enlargements at the quoted prices by using the original full-die negatives. This saves you from charges for rephotographing your individual project. In most cases, especially for the medium to large sized projects, this will yield good quality results. However, the smallest projects (for example AC-3) probably shouldn't be enlarged to more than about 8"x10".

We can produce the highest quality photomicrographs of individual projects, especially the smaller ones, by rephotographing the wafers to obtain full-sized negatives containing only single, individual projects. We have some MPC79 wafers on file, and can arrange to rephotograph individual projects on a custom basis; please contact us to discuss prices and make arrangements for such custom work.

If you have any questions about the procedures for ordering MPC79 photos, or about prices, please feel free to phone me at (408) 733-4500.

Yours truly,



Frank Saude
President

ORDER FORM FOR MPC79 PHOTOGRAPHS:

To order photos of MPC79 Dies and/or individual Projects, complete this order form and mail to:

Melgar Photographers, 2971 Corvin Drive, Santa Clara, CA 95051.

Please make checks payable to *Melgar Photographers*. An example order is illustrated on the reverse side for your convenience. If you have any questions, contact Melgar at (408) 733-4500.

Unit Prices:

Size:	BW	Color
5"x7"	\$2.25	\$3.00
8"x10"	3.00	5.00
11"x14"	8.00	10.00
16"x20"	12.00	20.00
20"x24"	15.00	30.00

Customer Address:

Name: _____
Address: _____
City: _____
State: _____ ZIP: _____
Phone: _____

Full Die Photographs: (Please print Die-Code carefully; an example code: AB)

QTY	Size	Color or BW	Die-Code	Unit Price	Total Price

Individual Project Enlargements: (print Project-Code carefully; example code: AB-8)

QTY	Size	Color or BW	Project-Code	Unit Price	Total Price

Subtotal: _____
+6.5% Sales Tax if CA order: _____
+2.50 for postage and handling: 2.50
Final Total: _____

List of Individual Project-Codes and corresponding Project ID's



MPC79 Multiproject Chip Layouts
(with Die-Codes)

Wafer MPC79A

AB-1 BatalliMIT
AB-2 GrunlichMIT
AB-3 FichtenbaumMIT
AB-4 KhouryMIT
AB-5 GoodrichMIT
AB-6 GrondakMIT
AB-7 PicardMIT
AB-8 AllenMIT
AC-1 HamiltonMIT
AC-2 PasciannMIT
AC-3 GlasserOT
AC-4 ChuMIT
AD-1 LuhakyUI
AD-2 HanesUI
AD-3 AdrianUI
AD-4 MontoyaUI
AE-1 GuptaCMU
AE-2 ClassUI
AE-3 MurrayOT
AE-4 RogersOT
AE-5 EbelingCMU
AE-6 KungCMU
AE-7 SongCMU
AE-8 HooyCMU
AE-9 Kehlot
AF-1 Schip2
AG-1 WalpCT
AG-2 KadhaiMIT
AG-3 RivesMIT
AG-4 SnyderOT
AG-5 GoddeauMIT

Wafer MPC79B

BI-1 MacomberSU
BI-2 GehlbachSU
BI-3 MarkesSU
BI-4 NolesSU
BI-5 ElahianSU
BI-6 AliasSU
BI-7 HendonSU
BI-8 HannahSU
BI-9 WolfSU
BJ-1 CampbellCT
BJ-2 FuCT
BJ-3 PapachCT
BJ-4 LiCT
BJ-5 BartonCT
BJ-6 CoconCT
BJ-7 PursfullCT
BJ-8 HozzuoCT
BJ-9 KingsleyCT
BJ-10 ItoCT
BJ-11 WhitneyCT
BJ-12 TannerCT
BK-1 MathewsSU
BK-2 ZarghanSU
BK-3 FrolksSU
BK-4 TaskettSU
BK-5 Clark2SU
BK-6 OhChinSU
BK-7 BechtolsheimSU
BK-8 ClarkSU
BL-1 HellerCT
BL-2 EatonCT
BL-3 WatteyneCT
BL-4 MosierCT
BL-5 GrayCT
BL-6 PinesCT
BL-7 DerbyCT
BL-8 PedersenCT
BM-1 LigockiCT
BM-2 DecuirUCB
BM-3 FungUCB
BM-4 LandmanUCB
BM-5 RumphCT
BM-6 EllisCT
BM-7 SequinUCB
BN-1 WatanabeUR
BN-2 LyonsUR
BN-3 KedemUR
BN-4 SohmUR
BN-5 ThoveUR
BN-6 UtsuSU
BN-7 TarsiSU

AN EXAMPLE COMPLETED ORDER FORM:

ORDER FORM FOR MPC79 PHOTOGRAPHS:

To order photos of MPC79 Dies and/or individual Projects, complete this order form and mail to:

Melgar Photographers, 2971 Corvin Drive, Santa Clara, CA 95051.

Please make checks payable to *Melgar Photographers*. An example order is illustrated on the reverse side for your convenience. If you have any questions, contact Melgar at (408) 733-4500.

Unit Prices:

Size:	BW	Color
5"x7"	\$2.25	\$3.00
8"x10"	3.00	5.00
11"x14"	8.00	10.00
16"x20"	12.00	20.00
20"x24"	15.00	30.00

Customer Address:

Name: LYNN CONWAY
 Address: 3333 COYOTE HILL RD.
 City: PALO ALTO
 State: CA ZIP: 94304
 Phone: (415) 494-4316

Full Die Photographs: (Please print Die-Code carefully; an example code: AB)

QTY	Size	Color or BW	Die-Code	Unit Price	Total Price
1	8 x 10	BW	AF	3.00	3.00
2	8 x 10	Color	AF	5.00	10.00

Individual Project Enlargements: (print Project-Code carefully; example code: AB-8)

QTY	Size	Color or BW	Project-Code	Unit Price	Total Price
1	11 x 14	Color	BL-4	10.00	10.00

Subtotal: 23.00
 + 6.5% Sales Tax if CA order: 1.50
 + 2.50 for postage and handling: 2.50
 Final Total: 27.00

MELGAR NEGATIVE NUMBERS:

(for Melgar internal reference use)

MPC79 DIE-CODE	BW NEGATIVE	COLOR NEGATIVE
AB	177112	177122
AC	177113	177124
AD	177117	177121
AE	177113	177127
AF	177115	177120
AG	177116	177119
BI	177119	177123
BJ	177118	177118
BK	177111	177129
BL	177110	177126
BM	177114	177125
BN	177115	177128