

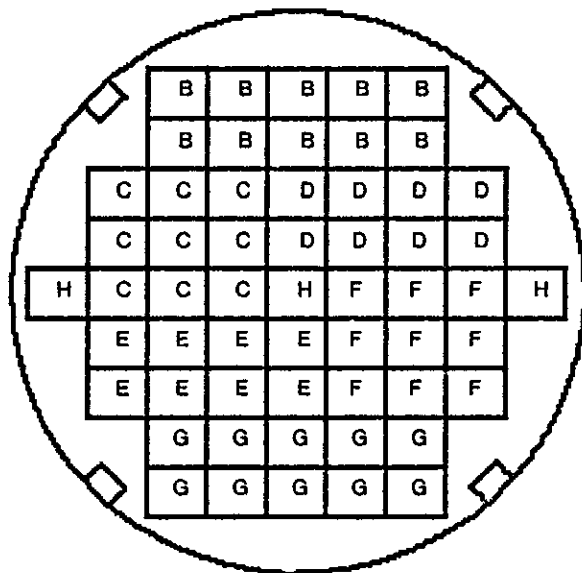
3. Project Locator Maps and List of Designers and Their Projects:

This section contains:

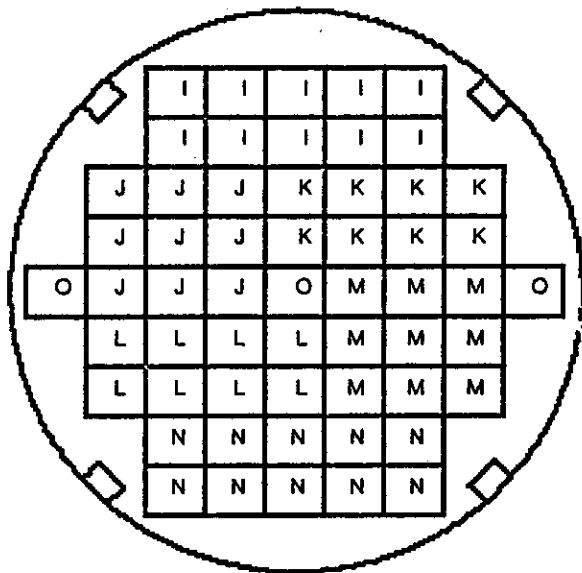
- (i) a map for each of the two wafer types, giving the locations of the various die-types in the wafers.
- (ii) a set of maps of the 12 project die-types, showing and encoding the positions of all 82 projects.
- (iii) a list associating the projects' wafer/die/location-codes and the MPC79 file-system project-ID's.
- (iv) a list of all 82 projects, identifying their designers and the functions of the projects.

The list of all 82 MPC79 projects groups the projects by university, listing them alphabetically by project ID within each university grouping. Each project entry in the list includes (i) the wafer/die/position-number code for the project, (ii) the project ID, (iii) the project designer(s), (iv) a short description of the project's function, (v) the project's bounding box dimensions in microns, and (vi) the area of the project in square mm.

Using the information in these maps and lists, participants can locate their project by determining the die-type (B, C, D, E, F, G, I, J, K, L, M, N) and then the project-number suffix for their project. The boxed, packaged chips returned to the university project-lab coordinators are marked with these die-type/project-number codes. The associated marked-up custom wire-bonding maps for each project are marked with the same code. When searching through diced but unpackaged chips, note that each chip contains a large die-type code-letter in its upper right-hand corner (see the Bonding Map section; the maps clearly show the code-letters).

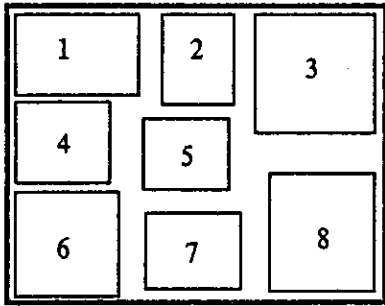


**MPC79A
Wafer Map**

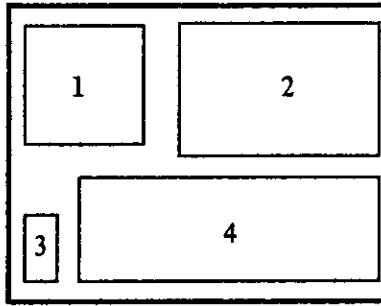


**MPC79B
Wafer Map**

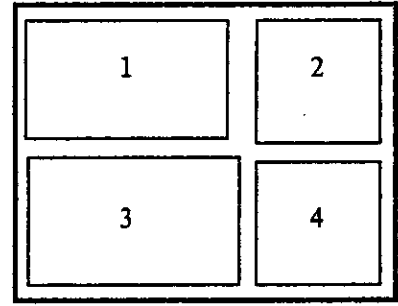
AB



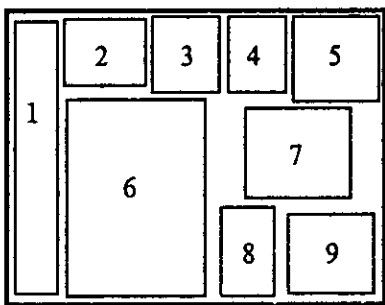
AC



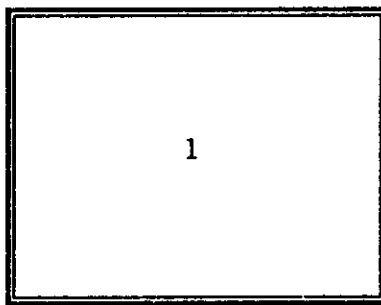
AD



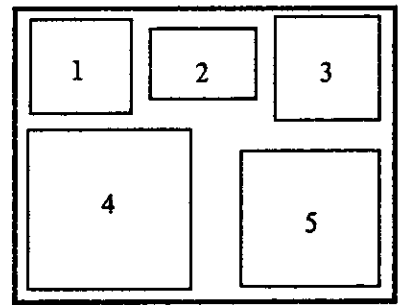
AE



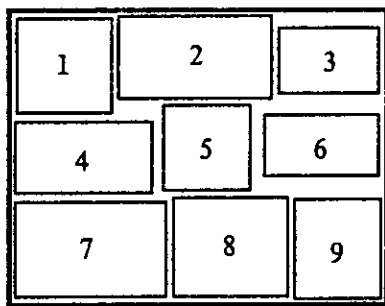
AF



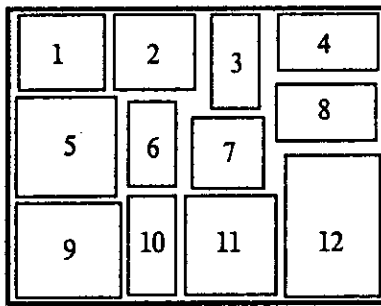
AG



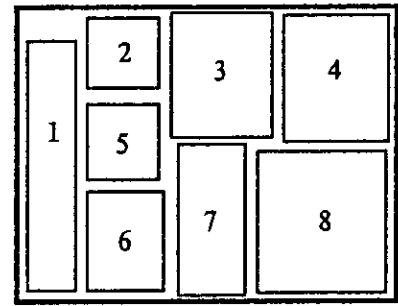
BI



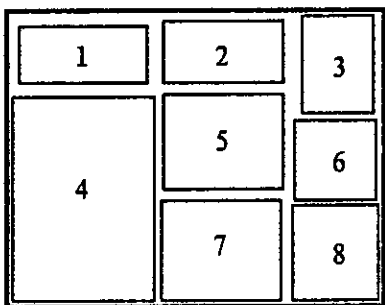
BJ



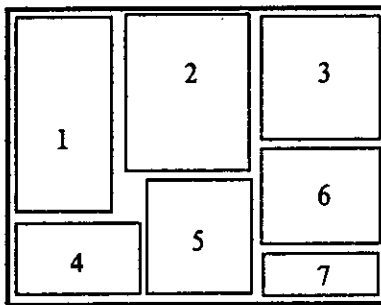
BK



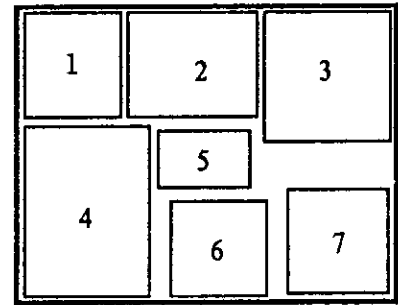
BL



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 BasketSU
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 Baskettt
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