

The Antique Chip Collector's Page

Intel Chip Markings

Identification Number

Primary Intel Format: **P AB999 (V9 or -9) /M**

P	A	B	999	(V9 or -9)	/M
Package *	Chip ID #, 1st Digit	Chip ID #, 2nd Digit	Chip ID #, Sequence #	Version Control	Military Spec
Most Common A - Pin Grid Array C - CerDIP D- Ceramic Sandwich P - Polymer Resin R - CLCC N - PLCC Others Kx - Plastic Quad Flat Packs K & Q - Ceramic Quad Flat Packs Others types exist, but are	0 - Test Chips / NA 1 - PMOS chip 2 - NMOS chip 3 - Bipolar chip 4 - 4-bit CPU's 5 - CMOS chip 6 - NA 7 - Bubble Memory 8 - 8-bit+ CPU's, MCU's, Supports 9 - NA	0 - Processors 1 - RAM 2 - Support Chip 3 - ROMs' 4 - Shift Registers 5 - EPLD 6 - PROM 7 - EPROM 8 - Watch/Timing Chips 9 - Telecommunications	99 or 999 or 99-9	V = A - 1st version B - 2nd version etc. or SX, DX, etc. 9 = indicates sub-version or approximate speed in Mhz	A, B, or C

of newer vintages					
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* Modifiers sometimes found in front of the Package type:

A -Automotive temperature range

I - Industrial Grade

L - Extended temperature range (-40C to 85C) express product with 160x8 hours burn-in

Q - Commercial temperature range with (0C to 70C) express product with 160x8 hours burn-in

T - Extended temperature range (-40C to 85C) express product with no burn-in

Date Code

Intel Date Code Format: **YYWW**

These number should be located by themselves with no letters or other numbers immediately adjacent. The numbers are often found on the underside with the country of manufacture.

WW - Week of manufacture. Ranges from 01 to 52.

YY - Year of manufacture. Ranges from 73 to 99.

Intel incorporated in 1968. Chips were not produced until 1971. Date codes were not used until 1973.

Country of Manufacture

If the chip was not made in the US, it should have the country of manufacture spelled out clearly on the chip.

Intel had/has plants in these countries:

Test and Assembly Plants

Barbados (about 1981-86*)

Costa Rica (Fab A6/T6), 1998)

Hong Kong (70's, subcontractor?)

Penang, Malaysia (1972)

Kulim Hi-Tech Park, Malaysia (1974, "PC Boards")

Shanghai, PR of China (1998)

Manila, Philippines (1983)



Mexico (70's, subcontractor?)

USA

- Chandler, AZ (1996)

The chip above was assembled in
Intel's Penang, Malaysia in the
12th week of 1975

Wafer Fab Plants

Leixlip, Ireland (Fab 10, 1994; Fab 14, 1998, 24, 2000)

Lachish-Kiryat Gat, Israel (Fab 18, 2000)

Jerusalem, Israel (Fab 8, 1985)

USA

- Chandler, AZ (Fabs 6, 1980-2000, Fab 12, 1997; Fab 22, 2001)

- Livermore, Ca (Fab 3)

- Mountain View, Ca (1668-76, "1st Fab")

- Santa Clara, Ca (Fabs 1, 1971 & 2)

- Colorado Springs, Co (Fab 23, "Rockwell")

- Hudson, MA (Fab 17 "DEC Fab 6")

- Rio Rancho/Albuquerque, NM (Fabs 7, 1983; 9.1; 9.2; 11)

- Aloha, Or (Fabs 4, 1976-97 ; 5, 1978; 15)

- Hillsboro, Or (Fabs 20, 1999)

- Fort Worth, TX (Fab 16, 2000)

* I have not seen any start/close dates. These dates are based on observations and best guesses.

Copyright Date

This is the earliest date that company asserted its copyright to the chip design (there may be multiple dates). Many people confused this date for the date of manufacture. The copyright date and Date Code can differ by 15 years on some chips.



Intel Copyrights of 1989 and 1993

Prototype, Pre-production, and Marketing/Engineering Samples

Some chips may be released before full production. These chips are usually provided to other companies involved in developing related hardware or software for the new chip. These chips are usually clear marked as "Prototype" or "Pre-production".

No chip ever made is without design flaws. Chips are released at a given "Step" level. If a few of the flaws are fixed the next released version of chip is said to be a higher Step level (often A, B, C, etc. are used). Sometimes chips are marked with a label that indicates the Step level of the chip. Most chips marked with Step levels are pre-production or very early production chips.



This is a pre-production Intel 8035 released at Step level C-1A

Marketing and engineering samples were often provided to large customers. These chip were nominally to be used to evaluate the new chip design. These chips are may have markings that says "Eng Sample", "Nor for Sale", etc. These are often early production chips to used promote the new chip and speed its acceptance.

Assembly, Lot, Customer, and Other Control Numbers

Other numbers on the chip are related to internal operations of the company and there for tracking and quality control purposes. Unless you have access to internal company records, these numbers are for the most part useless for collecting and hobbyist purposes.

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