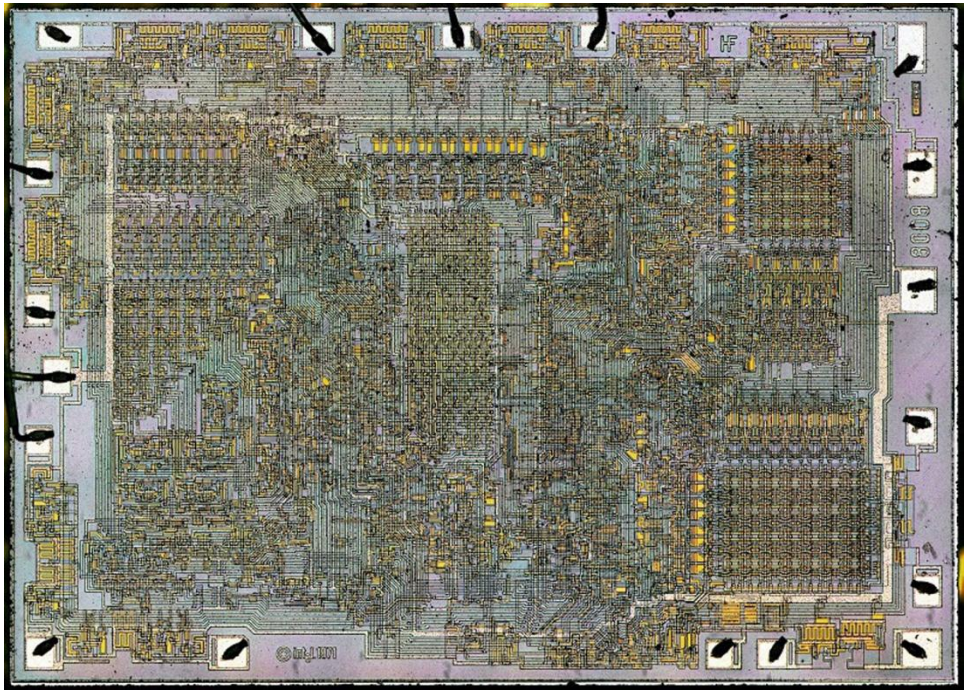
uP’s and support chips



Die of the Intel 8008, 1971 (link)

Microprocessors and support chips of the Soviet and non-Eastern Block regions in the Computarium collection

Last edit 27 April 2021, 45 items

Sections

- Soviet and Eastern Block
- Western and other Regions (= non-Eastern Block),
  Up to the 486 period.

Soviet and Eastern Block

Soviet series (labels are in Cyrillic!)**:**

- 580 : i8080 compatible
- 1801: PDP-11 compatible
- 1804: AMD 2903 compatible
- 1810: i8086 compatible
- 1816: i8046 compatible
- 1821: i8085 compatible
- 1858: Z80 compatible

See here:

Soviet integrated circuit designation

history of computing in the Soviet Union

conversion table from Cyrillic to Latin alphabet

.

KR580VM80A

Manufact.	Electropribor, Rodon
Country	CCCP
Model	KR580VM80A
Year	1979
Type	8 bit µP
Speed	2.5 MHz
Clone of	i8080A
Function	microprocessor
Database	1360, 1382

Clone of the Intel 8080A microprocessor which was introduced in 1974 in the USA.

Gift Carlo MULLESCH, COMPUTARIUM

http://www.cpushack.com/soviet-cpus.html#2

KR580IK57

Manufact.	
Country	CCCP
Model	KR580IK57
Year	1989
Type	DMA controller
Speed	
Clone of	i8257
Function	support
Database	1361

Clone of the Intel 8257 programmable DMA controller for the 8080 uP family.

Gift Carlo MULLESCH

http://www.cpushack.com/soviet-cpus.html#2
https://datasheetspdf.com/pdf/702169/IntelCorporation/8257/1

KR580VN59

Manufact.	Kvantor
Country	CCCP (Ukraine)
Model	KR580VN59
Year	1989
Type	interrupt controller
Speed	
Clone of	i8257
Function	support
Database	1362

Clone of the Intel 8259 priority interrupt controller for the 8080 uP family.

Gift Carlo MULLESCH

http://www.cpushack.com/soviet-cpus.html#2
https://datasheetspdf.com/pdf/702169/IntelCorporation/8257/1

KR580VG75

Manufact.	Electronpribor
Country	CCCP
Model	KR580VG75
Year	1989
Type	CRT controller
Speed	
Clone of	i8275
Function	support
Database	1365

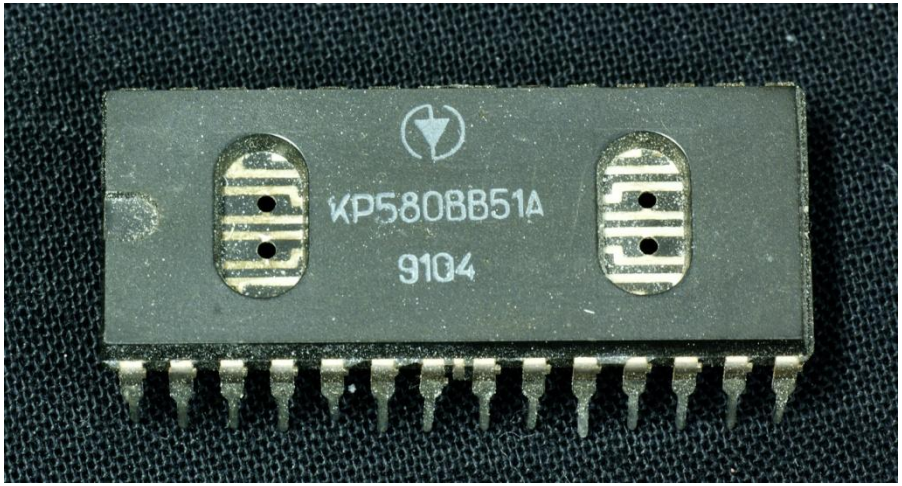
Clone of the Intel 8275 CRT (cathode ray tube = display monitor) controller for the 8080 uP family.

Gift Carlo MULLESCH

http://www.cpushack.com/soviet-cpus.html#2
https://datasheetspdf.com/pdf/702169/IntelCorporation/8257/1

KR580VV51A

Manufact.	Kvazar
Country	CCCP (Ukraine)
Model	KR580VV51A
Year	1991
Type	serial controller
Speed	
Clone of	i8251
Function	support
Database	1366



Clone of the Intel 8251 serial peripheral controller for the i8080 family (drives the serial port).

Gift Carlo MULLESCH

http://www.cpushack.com/soviet-cpus.html#2
https://datasheetspdf.com/pdf/516950/Intel/P8251A/1

KR580VV55A

Manufact.	Rodon
Country	CCCP (Ukraine)
Model	KR580VV55A
Year	1989
Type	parallel controller
Speed	
Clone of	i8255
Function	support
Database	1367

Clone of the Intel 8255 programmable peripheral interface for the i8080 family (drives the printer port).

Gift Carlo MULLESCH

http://www.cpushack.com/soviet-cpus.html#2
https://datasheetspdf.com/pdf/511194/Intel/P8255A/1

KR580VK28

Manufact.	Gamma
Country	CCCP
Model	KR580VK28
Year	1989
Type	bus driver
Speed	
Clone of	i8228
Function	support
Database	1363

Clone of the Intel 8228 bus driver (system controller) for the i8080 family.

Gift Carlo MULLESCH

http://www.cpushack.com/soviet-cpus.html#2

KR580VI53

Manufact.	Kvantor
Country	CCCP (Ukraine)
Model	KR580VI53
Year	1988
Type	timer
Speed	
Clone of	i8253
Function	support
Database	1364

Clone of the Intel 8253 programmable interval timer for the i8080 family.

Gift Carlo MULLESCH

http://www.cpushack.com/soviet-cpus.html#2
https://datasheetspdf.com/pdf/32743/IntelCorporation/P8253/1

KR580IR82

Manufact.	Gamma
Country	CCCP
Model	KR580IR82
Year	1989
Type	8 bit latch
Speed	
Clone of	i8282
Function	support
Database	1368

Clone of the Intel 8282 8 bit latch register for the i8080 family.

Gift Carlo MULLESCH

http://www.cpushack.com/soviet-cpus.html#2
https://datasheetspdf.com/pdf/727745/Intel/8283/1

KR580VA86

Manufact.	Gamma
Country	CCCP
Model	KR580VA86
Year	1991
Type	receiver/transmitter
Speed	
Clone of	i8286
Function	support
Database	1369

Clone of the Intel 8286 octal bus transceiver for the i8080 family.

Gift Carlo MULLESCH

http://www.cpushack.com/soviet-cpus.html#2
https://datasheetspdf.com/datasheet/8286.html

KR580GF24

Manufact.	Gamma
Country	CCCP
Model	KR580GF24
Year	1989
Type	clock generator
Speed	
Clone of	i8224
Function	support
Database	1370

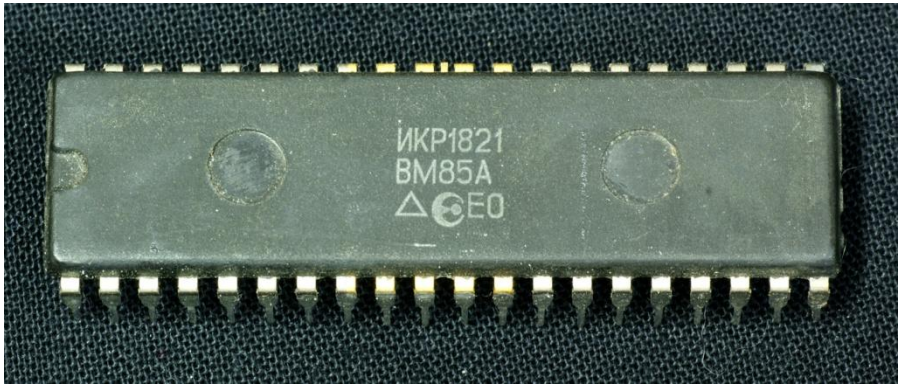
Clone of the Intel 8224 clock generator and driver for the i8080 family.

Gift Carlo MULLESCH

http://www.cpushack.com/soviet-cpus.html#2
https://datasheetspdf.com/pdf/500533/Intel/P8224/1

IKR1821VM85A

Manufact.	NZPP
Country	CCCP
Model	IKR1821VM85A
Year	?
Type	8 bit µP
Speed	3.6 MHz
Clone of	i80C85
Function	microprocessor
Database	1371



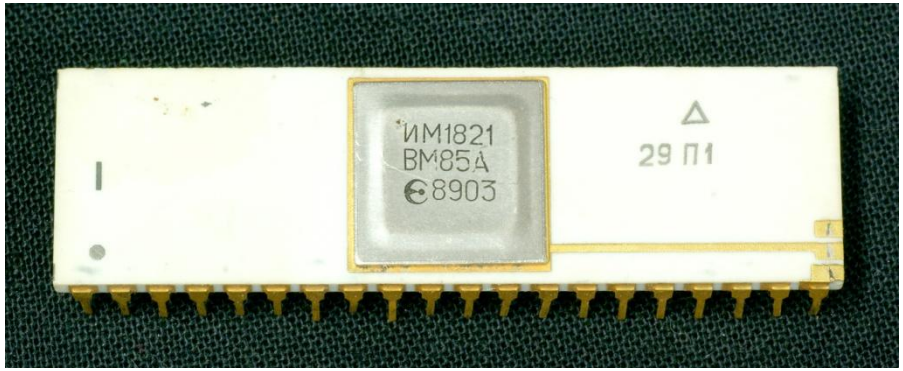
Clone of the Intel 8085 (80C85, CMOS version), with inbuilt clock and serial interface. Code compatible with the i8080.

Gift Carlo MULLESCH

http://www.cpushack.com/soviet-cpus.html#2
http://silirium.ru/ussr-1821.html

IM1821VM85A

Manufact.	NZPP
Country	CCCP
Model	IM1821VM85A
Year	1986
Type	8 bit µP
Speed	3.6 MHz
Clone of	i8085a
Function	microprocessor
Database	1372



Clone of the Intel 8085a, in a ceramic package (Gold top, there also was a Nickel top version)

Gift Carlo MULLESCH

http://silirium.ru/ussr-1821.html

KR1810VM86

Manufact.	Kvantor, Rodon, …
Country	CCCP (Ukraine)
Model	KR1810VM86
Year	1991
Type	16 bit µP
Speed	4.77 MHz
Clone of	i8086
Function	microprocessor
	29000 transistors
Database	1373,1374,1375

Clone of the Intel 8086, used in the PC-compatible EC1831/32 microcomputers made in Bulgaria.

Gift Carlo MULLESCH

http://www.cpushack.com/soviet-cpus.html#2
http://silirium.ru/ussr-1810.html

KR1804VS1

Manufact.	
Country	CCCP
Model	KR1804VS1
Year	1989
Type	4 bit µP
Speed	10 MHz
Clone of	AMD 2901
Function	ALU
Database	1376

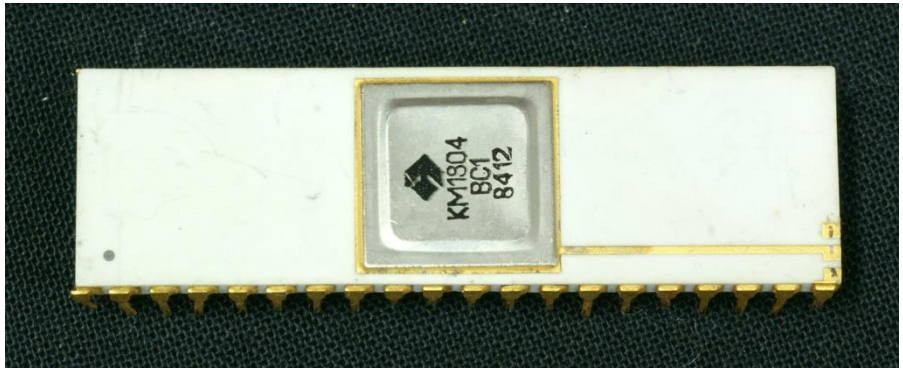
Clone of the 4-bit slice ALU of AMD (introduced in 1975), plastic package.

Gift Carlo MULLESCH

http://silirium.ru/ussr-1804.html
https://en.wikipedia.org/wiki/AMD_Am2900

KM1804VS1

Manufact.	
Country	CCCP
Model	KM1804VS1
Year	?
Type	4 bit µP (slice)
Speed	2 MHz
Clone of	AMD 2901
Function	ALU
Database	1377



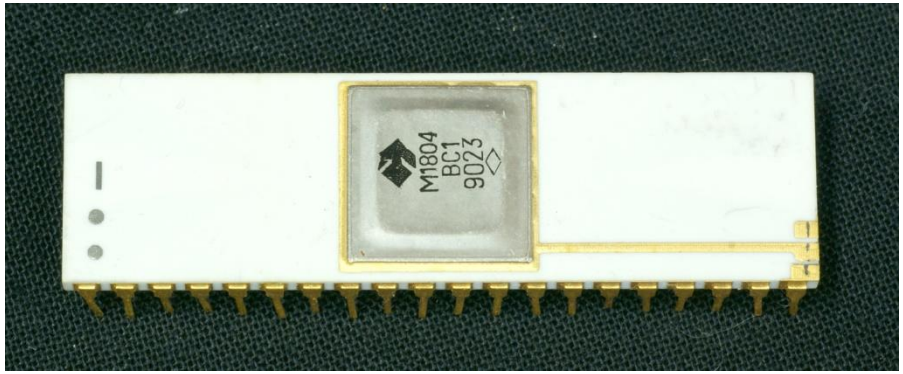
Clone of the 4-bit slice ALU of AMD (introduced in 1975), ceramic package, possibly mil. spec.

Gift Carlo MULLESCH

http://www.cpushack.com/soviet-cpus.html#2

M1804VS1

Manufact.	
Country	CCCP
Model	M1804VS1
Year	?
Type	4 bit µP (slice)
Speed	2 MHz
Clone of	AMD 2901
Function	ALU
Database	1378



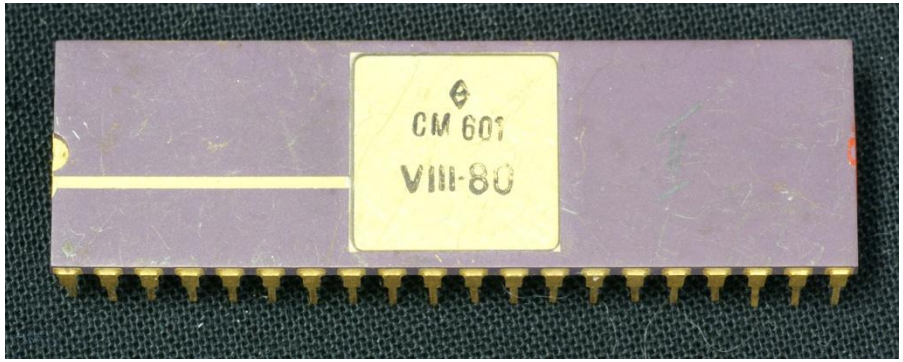
Clone of the 4-bit slice ALU of AMD (introduced in 1975), ceramic package, possibly mil. spec.
Not known what difference with previous model "KM" is.

Gift Carlo MULLESCH

http://www.cpushack.com/soviet-cpus.html#2

CM601

Manufact.	Pravetz
Country	Bulgaria
Model	CM601
Year	1985
Type	8 bit µP
Speed	1 MHz
Clone of	Motorola 6800
Function	microprocessor
Database	1380



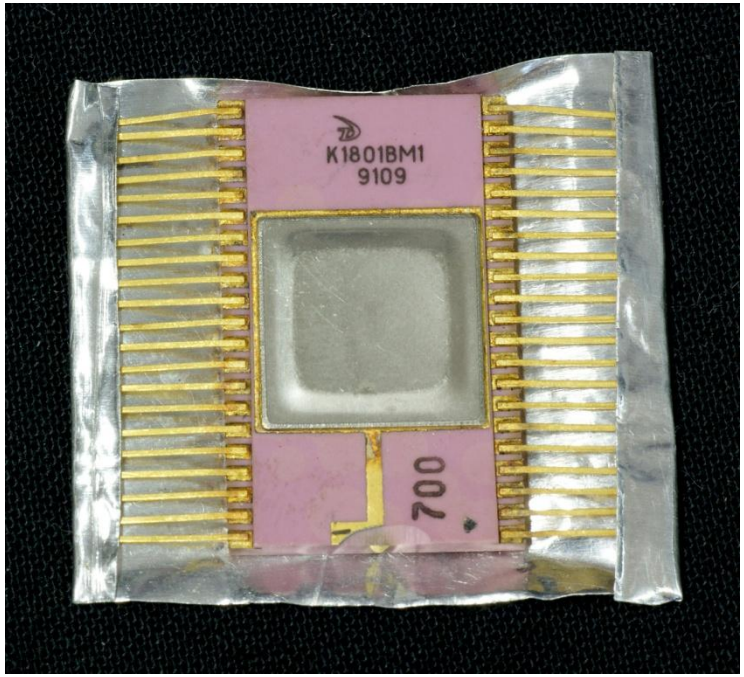
Clone of the Motorola 6800 microprocessor. Used in the Pyldin-601 microcomputer (link and link) built in 1988 and running UniDOS, compatible to PC-DOS.

Gift Carlo MULLESCH

http://www.cpushack.com/soviet-cpus.html#2

K1801VM1

Manufact.	Angstrem
Country	CCCP
Model	K1801VM1
Year	1982 (1984?)
Type	16 bit µP
Speed	$5*10^5$ ops/s, 3 MHz
Clone of	PDP-11
Function	microprocessor
	5um nMOS
Database	1379



Clone of the DIGITAL (DEC) 16-bit PDP-11 microprocessor capable of adressing 64kB memory. Compatible with Q-Bus. Uses the Elektronika NC instruction set. Built in Zelenograd (the Russian "Silicon Valley").

Gift Carlo MULLESCH

https://en.wikipedia.org/wiki/1801_series_CPU
http://silirium.ru/ussr-1801.html

KR1816VE35

Manufact.	Vostok
Country	CCCP
Model	KR1816VE35
Year	1986
Type	8 bit µP
Speed	12 MHz
Clone of	i8035
Function	microcontrollerr
Database	1383

Clone of the Intel 8035 8-bit microcontroller which was introduced in 1976, with on-chip clock, timers, 27 I/O ports and 64 bytes RAM but no ROM.

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http://silirium.ru/ussr-1816.html

KR1816VE39

Manufact.	Rodon
Country	CCCP
Model	KR1816VE39
Year	1990 ?
Type	8 bit µP
Speed	11 MHz
Clone of	i8039
Function	microcontroller
Database	1384

Clone of the Intel 8039 8-bit microcontroller which was introduced in 1976, with on-chip clock, timers, 27 I/O ports and 64 bytes RAM (128 bytes ?), (64kB ROM ?).

COMPUTARIUM

http://silirium.ru/ussr-1816.html

Non-Eastern block (USA,West, Asia)

Interesting (but oldie) read:
Great Microprocessors of the Past and Present (V 10.0.0)

Many items and pictures:
www.cpu-galerie.de
www.x86-guide.net/xhoba

The slides follow more or less the chronological order.

INTEL 8008

Manufact.	INTEL
Country	USA
Model	C8008
Year	1972
Type	8 bit µP
Speed	500 kHz (800 kHz?)
Clone of	
Function	microprocessor
	3500 transistors
	max.16 kB Ram
	3 voltages (5,-5,12)
Database	1385

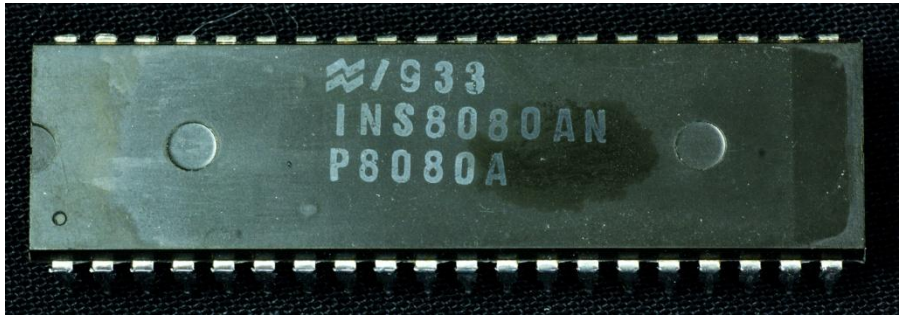
First 8-bit microprocessor of the world, made to be included in a terminal of CTC (later Datapoint Corp.), but never was. 14 bit address bus, max. Ram = 16 kB. 3500 transistors. Used in the Mark-8 and Micral-N microcomputers.

Gift Carlo MULLESCH

http://www.x86-guide.net/en/cpu/Intel-8008-CerDIP-cpu-no3578.html

INS8080AN

Manufact.	NATIONAL Semi.
Country	USA
Model	8080AN
Year	1974
Type	8 bit µP
Speed	2 MHz
Clone of	i8080
Function	microprocessor
	4500 transistors
	max. 64 kB Ram
	3 voltages (5,-5,12)
Database	1386



OEM version of the i8080 made by National Semiconductors. Full 8-bit uP with much improved instruction set w.r. to 8008 and 16bit address bus. Standard for many first PC's, like the IMSAI, … Three voltages +5, -5 and 12 V.

COMPUTARIUM.

http://old-computers.cz/index.php/cpu/item/24-nsc-ins8080an

INTEL 8085

Manufact.	INTEL
Country	USA
Model	8085AH
Year	1974
Type	8 bit µP
Speed	2 MHz
Clone of	
Function	microprocessor
	6500 transistors
	max. 64 kB Ram
	3 voltages (5,-5,12)
Database	1387

Successor of the 8080, binary compatible. Has supplemental serial and interrupt features. Multiplexed data and address bus to keep pin count low.

COMPUTARIUM.

https://en.wikipedia.org/wiki/Intel_8085

NATIONAL Semiconductor 8250

Manufact.	NS
Country	USA
Model	INS8250N
Year	1991
Type	UART
Speed	
Clone of	
Function	support
	serial line driver
	max. baud = 128000
Database	1391

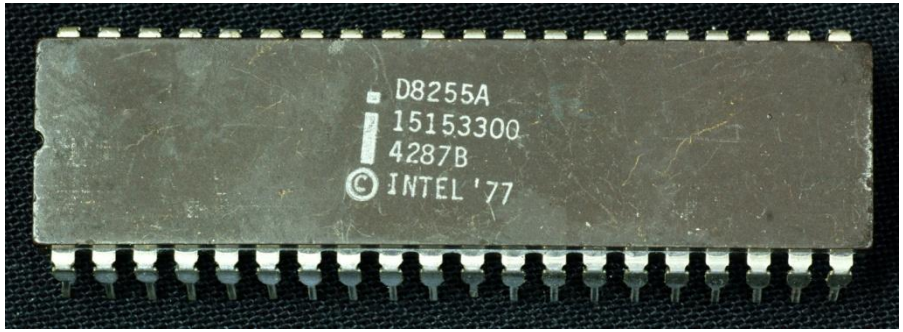
UART support chip to drive modem and serial equipment connected to the COM ports (IBM XT). Internal bit rate generator, but no FiFo register.

COMPUTARIUM.

https://wikivisually.com/wiki/Intel_8255
JAVA simulation

INTEL 8255A

Manufact.	INTEL
Country	USA
Model	D8255A PPI
Year	1974
Type	PPI
Speed	
Clone of	
Function	support
	parallel driver
Database	1390



PPI = programmable peripheral interface (= PIA = PIO). Three 8bit I/O ports. Standard chip in the IBM PC and clones to drive the external parallel printer (normally via the DB25 female socket). Developed as support chip for the i8080 /i8085 family.
COMPUTARIUM.

https://wikivisually.com/wiki/Intel_8255
JAVA simulation

MOTOROLA 6800

Manufact.	MOTOROLA
Country	USA
Model	6800L
Year	1974
Type	8 bit µP
Speed	1 to 2 MHz
Clone of	
Function	microprocessor
	4100 transistors
	max. 64 kB Ram
	single voltage (5V)
Database	1397

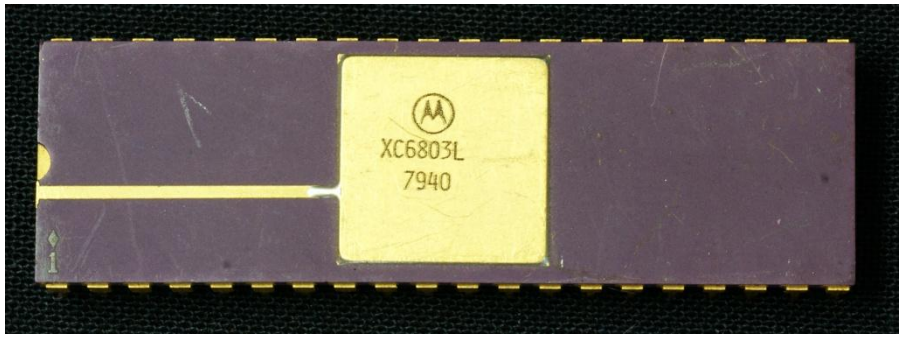
Single voltage (5V) uP with 16bit address bus. Used in the SWTPc microcomputer system, the first microcomputer system at the LCD (and in a Luxembourg school).
This item was made in Malaysia.

COMPUTARIUM.

http://old-computers.cz/index.php/cpu/item/24-nsc-ins8080an

MOTOROLA 6803

Manufact.	MOTOROLA
Country	USA
Model	XC6803L
Year	1974
Type	8 bit µP
Speed	1 to 2 MHz
Clone of	
Function	microprocessor
	4100 transistors
	max. 64 kB Ram
	single voltage (5V)
Database	1399



Same as the 6800, but with inbuilt clock and 128 Byte Ram. Also manufactured as OEM by Hitachi (HD6803C)

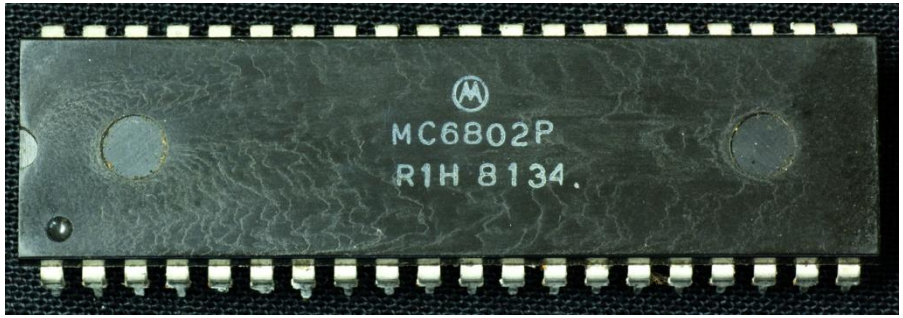
This item was made in Malaysia.

COMPUTARIUM.

http://old-computers.cz/index.php/cpu/item/24-nsc-ins8080an

MOTOROLA 6802

Manufact.	MOTOROLA
Country	USA
Model	MC6802P
Year	1976
Type	8 bit µP
Speed	1 to 2 MHz
Clone of	
Function	microprocessor
	4100 transistors
	max. 64 kB Ram
	single voltage (5V)
Database	1398



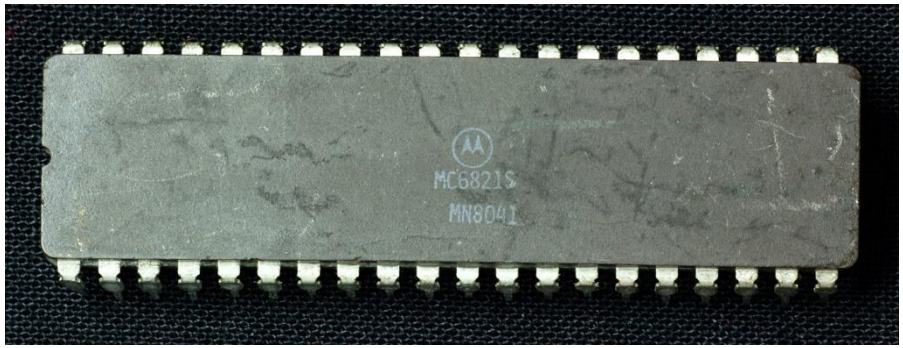
Same as the 6803, but with inbuilt clock and 128 Byte Ram, of which the first 32 bytes can be maintained in a low-power stand-by mode..

This item was made in Malaysia.
COMPUTARIUM.

http://old-computers.cz/index.php/cpu/item/24-nsc-ins8080an

MOTOROLA 6821S

Manufact.	MOTOROLA
Country	USA
Model	6821 PIA
Year	1976
Type	support
Speed	1 MHz
Clone of	
Function	support
	parallel I/O (16)
	single voltage (5V)
Database	1400



Second version of the original PIA 6820 (PIA = Peripheral Interface Adapter). The PIA has 16 I/O lines which can be grouped into 2 bytes, and programmed individually for input or output (e.g. for sensing a switch, driving A/D converters, driving a printer…)
COMPUTARIUM.

https://en.wikipedia.org/wiki/Peripheral_Interface_Adapter
https://sowerbutts.com/replica1-serial/6821.pdf

MOTOROLA 6850

Manufact.	MOTOROLA	*No picture!*
Country	USA	
Model	6850 ACIA	
Year	1976	
Type	support	
Speed	1, 1.5 A, 2B MHz	
Clone of		
Function	support	
	serial I/O	*Asynchronous Communications Interface Adapter (UART) used for driving serial RS232 terminals , MIDI ports or other serial equipment. The second of the ubiquitous support chips.*
	single voltage (5V)	*COMPUTARIUM.*
Database		*https://hardware.speccy.org/datasheet/MC6850.pdf*

HITACHI HD68000P8

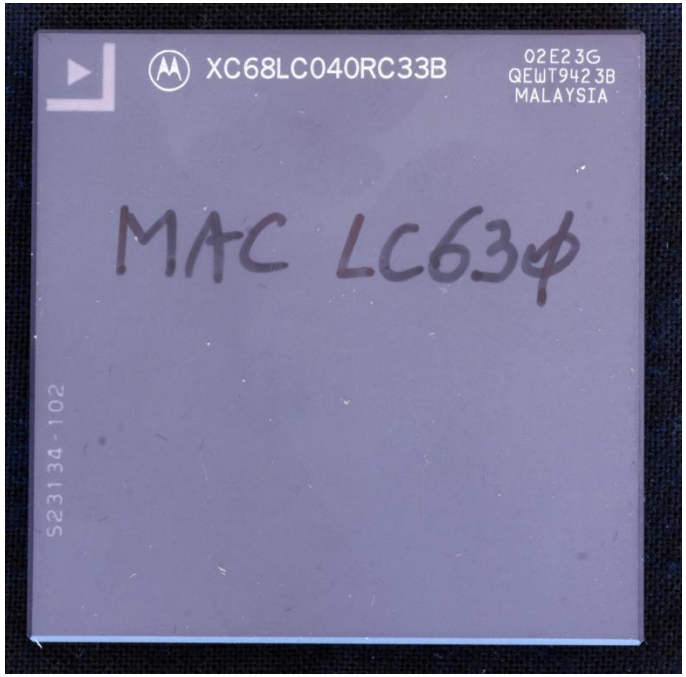
Manufact.	HITACHI
Country	JAPAN
Model	68000
Year	1980 ?
Type	32 bit uP
Speed	8 MHz
Clone of	Motorola 68000
Function	microprocesseur
	68000 transistors
	adress bus 24 bit
	single voltage (5V)
Database	1401

Large 64pin IC, OEM version of the Motorola 68000 which was introduced in 1979. Used in Macintosh, Amiga and many other PC's or industrial equipment. There exist many second source versions (Mostek, Rockwell, Thomson, Signetics, Toshiba…)
COMPUTARIUM.

http://doc.chipfind.ru/pdf/hitachi/hd68000p8.pdf
https://en.wikipedia.org/wiki/Motorola_68000

MOTOROLA XC68LC040RC33B

Manufact.	MOTOROLA
Country	USA
Model	68LC040
Year	1990
Type	32 bit uP (CISC)
Speed	33 MHz
Clone of	
Function	microprocesseur
	1.2E6 transistors
	adress bus 32 bit
	single voltage (5V)
Database	1408



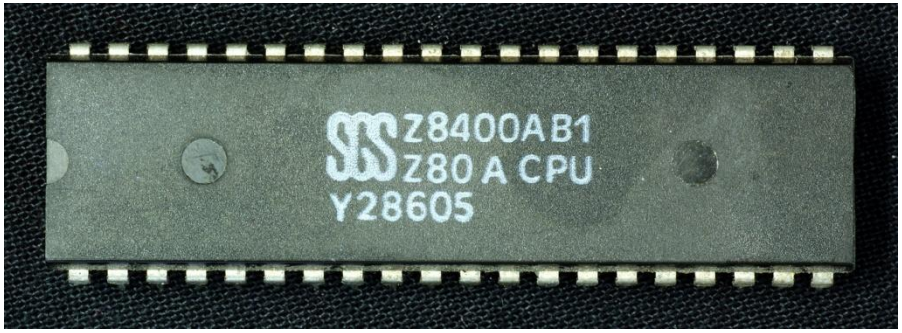
179 pin (PGA179) microprocessor with the inbuilt MMU disabled. This item is from an Apple Macintosh LC630. XC means "not qualified" = "prototype", "LC" = "low cost". Has probably a bug in the FPU execution.

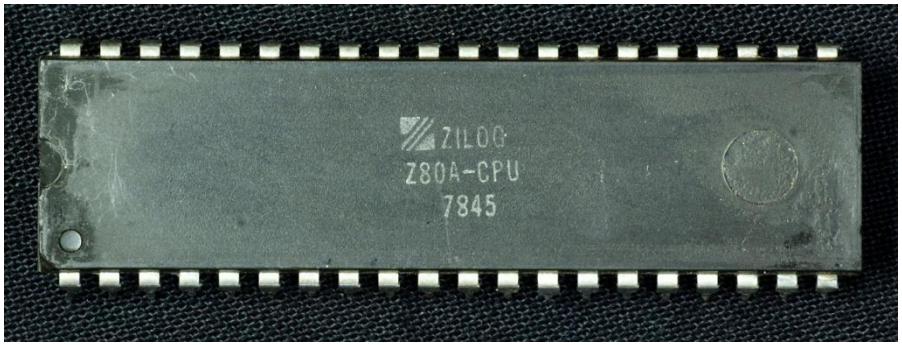
COMPUTARIUM.

https://en.wikipedia.org/wiki/Motorola_68040

ZILOG Z80

Manufact.	ZILOG
Country	USA
Model	Z80 A
Year	1978
Type	8 bit µP
Speed	2.5 MHz
Clone of	
Function	microprocessor
	8500 transistors
	adress bus 16 bit
	single voltage (5V)
Database	1402, 1403, 1404



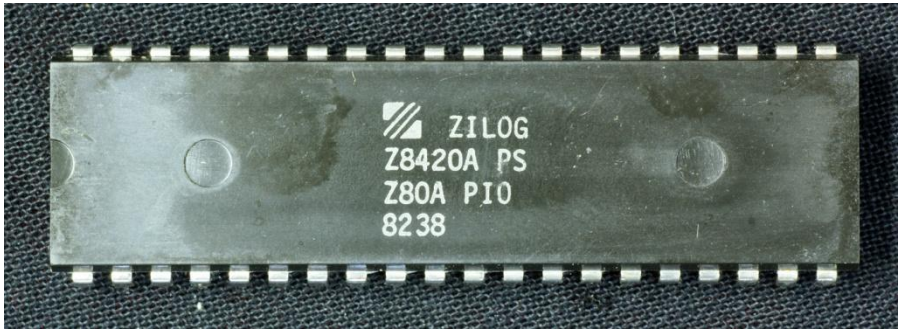


Best sold 8 bit uP of all times, found in many electronic games and home computers (Tandy TRS-80). The lower picture shows the chip made in the 45th week of 1978, the upper picture an SGS OEM version from 1986. Software compatible with the i8080 family.
COMPUTARIUM.

https://www.cpu-world.com/CPUs/Z80/index.html

ZILOG Z80 PIO

Manufact.	ZILOG
Country	USA
Model	Z80-PIO
Year	1977
Type	support
Speed	
Clone of	
Function	parallel driver
Database	1405, 1406



Like the PIA of Motorola, the PIO (Programmable Input/Output) is a 16bit line I/O support chip. Programming correctly these chips was not always trivial (see manual). The upper picture shows a PIO manufactured in 1982,38th week.
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https://www.cpu-world.com/CPUs/Z80/index.html

ZILOG Z80 SIO

Manufact.	ZILOG	*No picture!*
Country	USA	
Model	Z80-SIO	
Year	1977 ?	
Type	support	
Speed		
Clone of		
Function	serial driver	
		Like the ACIA of Motorola, the SIO (Serial Input/Output) is a UART type support chip for serial connections (often called DART for Dual Channel Asynchronous Receive and Transmit)
		COMPUTARIUM.
Database		*http://www.blunk-electronic.de/train-z/pdf/howto_program_the_Z80-CTC.pdf*

SIEMENS SAB8086-2P

Manufact.	SIEMENS
Country	Germany
Model	8086-2P
Year	1988
Type	16 bit µP
Speed	8 MHz
Clone of	i8086
Function	microprocessor
	29000 transistors
	address bus 20 bit
	single voltage (5V)
Database	1388

OEM version of the Intel 8086 16bit uP (1978); this item is manufactured in the 32th week of 1988. The 8086 is the successor of the 8-bit 8080, with 20 bit address space. The first CISC (Complex Instruction Set Computer) of the a continuously expanding family
COMPUTARIUM.

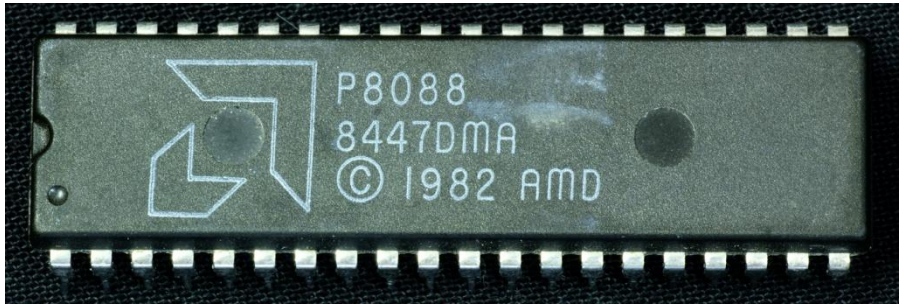
https://en.wikipedia.org/wiki/X86
http://www.x86-guide.net/en/cpu/Siemens-8086-2-CDIP-cpu-no1036.html

INTEL 8088

Manufact.	INTEL	
Country	USA	
Model		
Year	1979	
Type	16 bit µP	
Speed	5 MHz	
Clone of		
Function	microprocessor	
	29000 transistors	*Successor of the 8-bit 8080, with 20 bit address space. The first CISC (Complex Instruction Set Computer) of the a continuously expanding family. Drives the 16-bit ISA bus found in many first microcomputers*
	single voltage (5V)	*COMPUTARIUM.*
Database	1397	*https://en.wikipedia.org/wiki/X86*

AMD P8088

Manufact.	AMD
Country	USA
Model	8447DMA
Year	1984
Type	16 bit µP
Speed	10 MHz
Clone of	i8088
Function	microprocessor
	29000 transistors
	single voltage (5V)
Database	1389



Legal clone of i8088 (= iAPX88), built in the 47th week of 1984 (= Model). Nearly identical to the 8086 except a 8 bit data bus (instead 16 bit). Was often found in use in XT clones. The i8088 was designed in Haifa, Israel.

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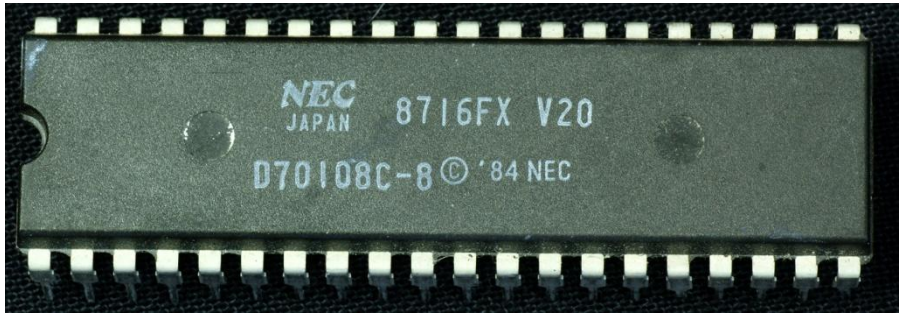
https://en.wikipedia.org/wiki/X86

NEC V20

Manufact.	NEC
Country	JAPAN
Model	D70108C-8
Year	1984
Type	8 bit µP
Speed	8 MHz
Clone of	i8088
Function	microprocessor
	63000 transistors
	max. 128 kB Ram
	single voltage (5V)
Database	1394



Legal clone of the i8088 (1979), with double count of transistors. 8 bit external bus, address with 20 bit. Often found in in-expensive IBM PC clones.

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http://www.x86-guide.net/en/cpu/Nec-V20-8MHz-PDIP-cpu-no924.html

INTEL 80286

Manufact.	INTEL
Country	USA
Model	iAPX286
Year	1982
Type	16 bit µP
Speed	10 MHz
Clone of	
Function	microprocessor
	134000 transistors
	max. Ram
	single voltage (5V)
Database	1392

Separate address and data bus, not multiplexed, memory management. Code compatible with the 8086 family. Used in the IBM AT (1984) and compatibles. First introduced in 1982 with 5 MHz clock. The model shown is in a PLCC package.
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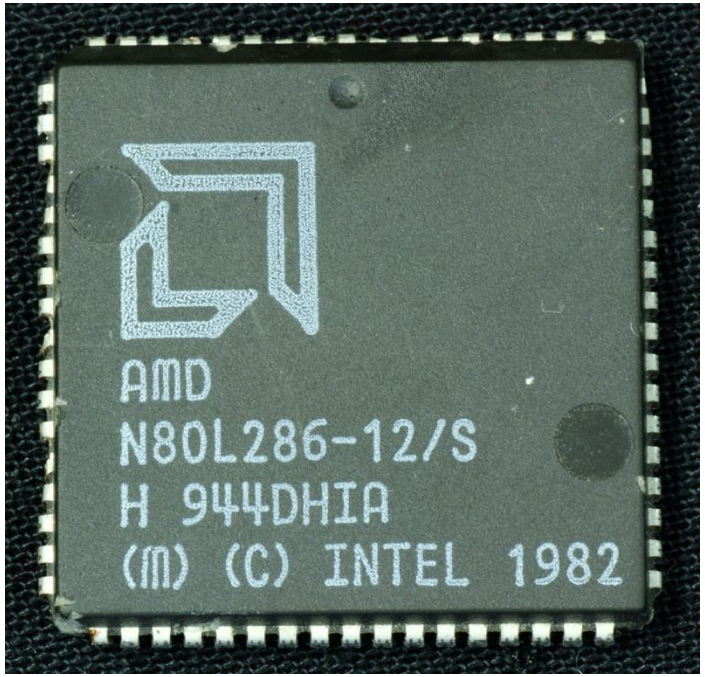
https://en.wikipedia.org/wiki/Intel_80286

AMD 80286

Manufact.	AMD
Country	USA
Model	N80L286-12/S
Year	1994 ?
Type	16 bit µP
Speed	12 MHz
Clone of	i80286
Function	microprocessor
	134000 transistors
	max. 128 kB Ram
	single voltage (5V)
Database	1393



This is a later OEM version with a 12 MHz clock. Also in PLCC form (PLCC = Plastic Leaded Chip Carrier).

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http://www.cpu-galerie.de/html/amd80286.html

INTEL 80386DX

Manufact.	INTEL
Country	USA
Model	480386DX-20
Year	1985
Type	32 bit µP
Speed	20 MHz
Clone of	
Function	microprocessor
	275000 transistors
	compatible 8086
	single voltage (5V)
Database	1395

The 386 was launched in 1985 and built up to 2007. It could work with a 16 or 32 bit external bus. This ceramic PGA package has 132 pins (PGA-132). The early versions had a bug in the 32bit multiplication and were badged "16bit S/W only". Intel = single source for nearly 5 years. COMPUTARIUM.

https://en.wikipedia.org/wiki/Intel_80386#80386DX

INTEL 80486DX

Manufact.	INTEL
Country	USA
Model	A80486DX-25
Year	1989
Type	32 bit µP
Speed	25 MHz
Clone of	
Function	microprocessor
	8 kB on chip SRAM
	32 bit data + address
	1.2 E6 transistors
Database	1396

168 pin PGA format. Integrated FPU (floating point unit) which was disabled in the 486SX variant. Addressable memory ("flat" memory) up to 4 GB.
The next generation of uP's were the Pentium line.

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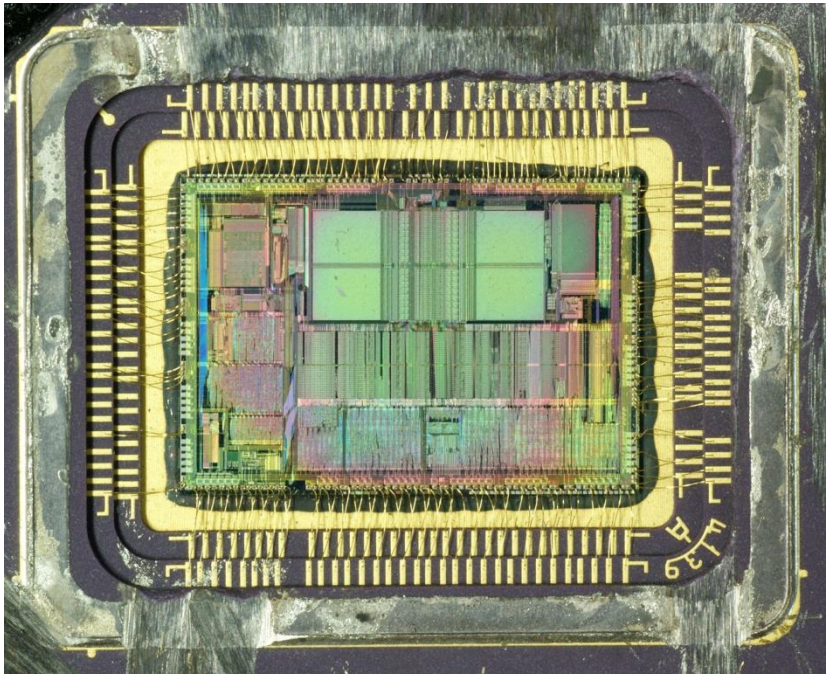
http://www.x86-guide.net/en/cpu/Intel-486DX-25-PGA-cpu-no2217.html

INTEL 80486SX die

Manufact.	INTEL
Country	USA
Model	
Year	
Type	32 bit µP
Speed	25 MHz
Clone of	
Function	microprocessor
	32 bit data + address
	single voltage (5V)
Database	1407



Picture of the die of a 486SX on ceramic PGA, with the cover removed. Picture made in ambient light. Look here for microscope pictures.
The average line thickness is 3.28 um (micrometer); there 3 levels of metal (link).

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