

Mainboard Versions

From CPCWiki - THE Amstrad CPC encyclopedia!

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How to Decode the CPC serial number

This legend will help you define the month and year your CPC rolled out of the factory, as well as the factory itself.

There are two main types of serial number on the back of CPC:

- The first type is located on a small white label. Format is "123456 Kxx-yy"
- The second type is shown directly on the main label and consists of ten digits.

Interpretation of the first type:

"123456 Kxx-yy"

- K is the country of production (K for Korea - South Korea)
- Xx is the plant (31 or 32 are the two codes that typically found).

- Yy is the year and month of leaving the factory. First digit represents the year (4 for 1984, 5 for 1985), second digit represents the month (1 through 9 = January-September, X, Y and Z= October, November and December)
- Finally, the 6-digit number is the actual serial production sequence number for that factory and year

Examples:

- 93132 K32-54 => Korea factory 32 - April 1985 (a 664)
- 218 167 K32-5X => Korea Factory 31 - October 1985 (a 6128)
- 16201 K31-62 => Korea factory 31 - February 1986 (464)

This numbering was used until February 1986. It relates to a package of 464, 664 and every part of 6128.

Interpretation of the 2nd type:

10 digits (often with a dash between the 3rd and 4th digits)

- 1st digit country code (5 for Korea, Thailand for 6)
- 2nd and 3rd digit = plant code (found: 31 and 32 but also 33, 35, 41 and 71 for Thailand)
- 4th and 5th digits (possibly preceded by a hyphen) = production date (year and month as in the previous system)
- 5-end correspond to the sequence number of the chain of production (per site per month now)


Examples:

- 5326604065 => Korea Factory 31 - June 1986 (it's a 6128)
- 533-7316093 => Korea Factory 31 - March 1987 (it's a 464)
- 671-9408078 => Thailand Factory 71 - April 1989 (it's a 6128)

Boards



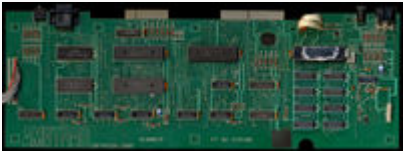



CPC464 Prototype

- **Size: 405x155 mm**

<i>PCB Top</i>	<i>PCB Bottom</i>	Description
		<p>Board: Prototype with Gate Array Simulator (more pictures)</p> <p>The Gate Array Simulator board (mounted on top of the mainboard, and almost having the same size as the mainboard) contains four 8K EPROMs, and a Gate Array prototype made of several logic chips.</p> <p>In later versions these evolved into a normal 28pin 32K ROM chip, and the custom 40pin Gate Array chip.</p>


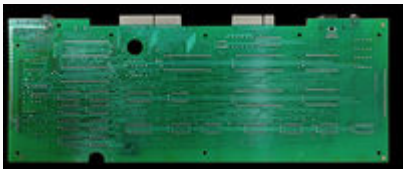

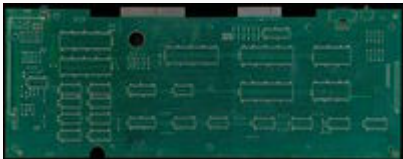
CPC464 version 1 (original)

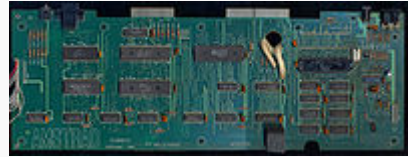
- **Size: 405x155 mm**
- Big mainboard, old Gate Array with cooling plate and with VCC2; supplied from VCC via two 12 ohm resistors, R138 and R139, which are seen (with white coating) near the cooling plate.

<i>PCB Top</i>	<i>PCB Bottom</i>	Description
		Board: PT NO Z70100, without any "MCnnnn" code, Copyright 1983 Original version. Real wires going to keyboard. another picture.
		Board: PT NO 270100, MC0001A, Copyrigh 1983 Same as "Z70100 MC0001A", but with uncommon text layer: labeled "270100" (not "Z70100"), says "Copyrigh" (not "Copyright"), and, unlike all other boards, its text has slashed zeroes. another picture.
		Board: PT NO Z70100, MC0001A, Copyright 1983 Keyboard connector now has two rows of soldering points; probably intended to support two different connectors: The old PCB keyboard with wires, and the new CPC664-style 19pin single-foil "membrane" keyboard. More Pictures here, here and here.

CPC464 version 2 (new gate array)

- **Size: 405x152 mm**
- Separate soldering points for old and new Gate Array (with changed pin-outs).
- New connector for new 6128-style 2x10pin dual-foil membrane keyboards (still has optional soldering points old 19pin foils).

<i>PCB Top</i>	<i>PCB Bottom</i>	Description
		Board: PT NO Z70200, MC0001A, Copyright 1984 Here's a picture of the gate array under the cooling plate and cooling paste removed. Other pictures here and here.
		Board: PT NO Z70200, MC0002A, Copyright 1984 The 40009 chip was removed from the board.



**Board: PT NO Z70200,
MC0002B, Copyright 1984**

The cooling plate and cooling paste are removed on the photo, revealing the normally hidden 40007-4 gate array chip
(Another picture)



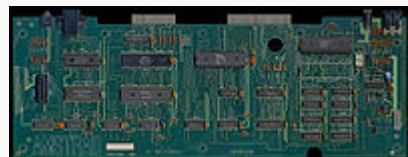
**Board: PT NO Z70200,
MC0002C, Copyright 1984**

Notice that the 472 board below uses other Gate Array model but the board is the same.
(Another picture)



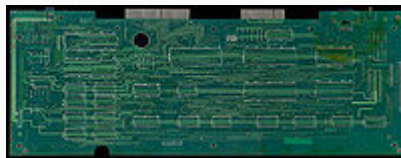
**Board: PT NO Z70200,
MC0002C, Copyright 1984**

40010 Gate Array. This board was in an Australian Awa 464.



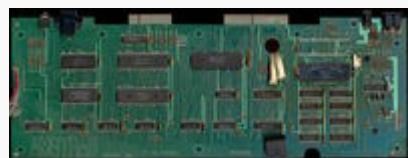
**Board: PT NO Z70200,
MC0002D, Copyright 1984**

another picture.



**Board: PT NO Z70200,
MC0002D, Copyright 1984**

With Gate Array 40008. Notice also that the board is fitted with resistors R138 and R139.



**Board: PT NO Z70200,
MC0003A, Copyright 1984**

English board with original 'Tall Key' keyboard connector only. Picture from an eBay UK CPC464 for sale ad.



**Board: PT NO Z70200,
MC0008C, Copyright 1984**

Schneider board with shielding plates, and additional filtering loops.

Without old 19pin keyboard connector.

Another picture.














**Board: PT NO Z70200,
MC0008D**

French board with shielding plates, and additional filtering loops, and French AZERTY ROM.

Without old 19pin keyboard connector.

CPC464 version 3 (medium-sized)

- **Size: 240x150 or 238x145 mm**
- Medium sized mainboard. Same components as previous version, but arranged more tightly. Joystick/stereo moved to left side.
- Can be optionally fitted with Amphenol connectors (instead of Edge connectors, as far as known, this option was never used for the 464). The screw-holes have contacts for optional shielding-plate (this option was used in German Schneider models).

<i>PCB Top</i>	<i>PCB Bottom</i>	Description
		Board: PT NO Z70374, MC0044A
		Board: PT NO Z70374, MC0044B More pictures here and here
		Board: PT NO Z70375, MC0044D Mostly same as Z70374. The 3 resistors in upper-right are arranged differently, different cassette connector installed, tinned GND fields. Another picture
		Board: PT NO Z70375, MC0044D Same board as above but with a 40010 Gate Array. Note that this board has been repaired.
		Board: PT NO Z70378, MC0046A Additional filtering loops near cassette, monitor, keyboard connectors. Used in German Schneider models.
		Board: PT NO Z70378, MC0046A Same board as above but with a 40010 Gate Array. Additional filtering loops near cassette, monitor, keyboard connectors. Used in German Schneider models. Another picture
		Shielding as found in German Schneider models

CPC464 version 4 (cost-down)

- **Size: 237x108 mm**

<i>PCB Top</i>	<i>PCB Bottom</i>	Description
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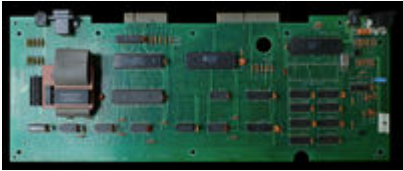
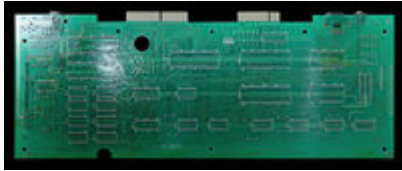


Board: PT NO Z80329, MC0099A, Copyright 1988

Tiny mainboard. Uses 100pin SMD Gate Array (combines the old Gate Array, CRTC, and some FDC/DRAM/RESET logic in one chip).

Here is another picture.

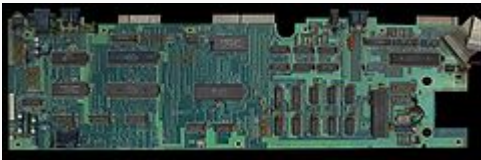

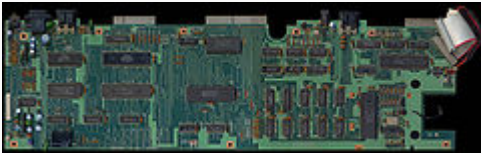

CPC472

■ Size: 405x155 mm

<i>PCB Top</i>	<i>PCB Bottom</i>	Description
		Board: PT NO Z70200, MC0002C, Copyright 1984 with MS0043A daughterboard (more pictures) The Spanish CPC472, with nonfunctional 8K RAM on the daughterboard
		Board: PT NO Z70200, MC0002D, Copyright 1984 with MS0043A daughterboard (more pictures) The Spanish CPC472, with nonfunctional 8K RAM on the daughterboard

CPC664

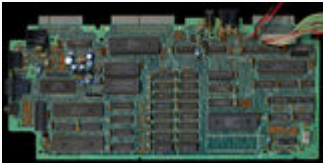
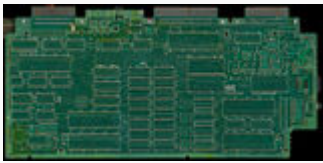



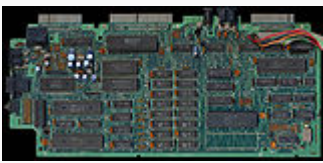
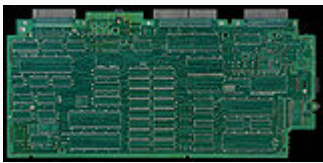




■ Size: 475x155 mm

<i>PCB Top</i>	<i>PCB Bottom</i>	Description
		Board: PT NO Z70205, MC0005A 8pin FDC Data Separator
		Board: PT NO Z70205, MC0005B Another 664 version, found in German Schneider CPCs (but might be also used in other countries?) This board version typically includes a small patch: A resistor soldered between Pin9 (A0) and Pin14 (/CASADDR) of IC105. The patch is also seen here

(http://amstrad.cpc.free.fr/amstrad/cpc664_e.htm).
The resistor is labeled as R160 in the schematic, but isn't labeled on the PCB, so it was apparently added after designing the PCB.
Here is another picture.

CPC6128 version 1 (8pin data separator, solder points for old and new gate array)



















- Size: 320x155 mm

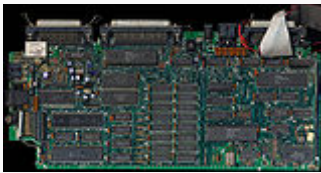
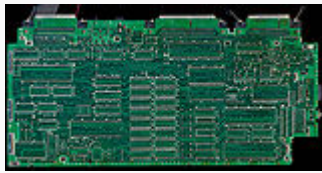
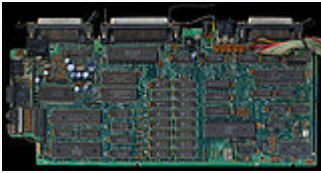




<i>PCB Top</i>	<i>PCB Bottom</i>	Description
		Board: PT NO Z70210, MC0009A Separate soldering points for old and new Gate Array (as far as known, the old Gate Array was never used in 6128 though, only in 464). 8pin FDC Data Separator. Can be fitted with Amphenol connectors (as used in German CPCs) (instead of edge connectors). Here's another picture.
		Board: PT NO Z70210, MC0009A Centronics Version Separate soldering points for old and new Gate Array.
		Board: PT NO Z70210, MC0009B Separate soldering points for old and new Gate Array.
		Board: PT NO Z70210, MC0009C Separate soldering points for old and new Gate Array.
		Board: PT NO Z70210, MC0012A Centronics Version Separate soldering points for old and new Gate Array.
		Board: PT NO Z70210, MC0012B Centronics Version Separate soldering points for old and new Gate Array.

CPC6128 version 2 (24pin data separator, solder points for new gate

array only)



- Size: 320x155 mm

PCB Top	PCB Bottom	Description
		Board: PT NO Z70290, MC0020A, ECMKI-94HB, Copyright 1985
		Board: PT NO Z70290, MC0020B, R1706-94HB, Copyright 1985 Can be fitted with Amphenol connectors (done in Germany) (instead Edge connectors). Uses 24pin FDC Data Separator. Here's also another picture.
		Board: PT NO Z70290, MC0020C, Copyright 1985 Another picture
		Board: PT NO Z70290, MC0020F, Copyright 1985
		Board: PT NO Z70290, MC0020F, ELC4970 94V-0, Copyright 1985 Another picture
		Board: PT NO Z70290, MC0020G, Copyright 1985
		Board: PT NO Z70290, MC0020H, Copyright 1985
		Board: PT NO Z70290, MC0020I, 94V.0-FR-4, Copyright 1985 Here's also another picture.
		Board: PT NO Z70290, MC0023D, 94HB-R1706, Copyright 1985 Sold in Germany, with Amphenol connectors, front of mainboard has several vias for giving better contact to shielding plate). The via in the text makes it easy to misread the part number (it's Z70290, not Z70250).

		More pictures here and here .
		Board: PT NO Z70290, MC0023G, 94HB-R1706, Copyright 1985 Fitted with Amphenol connectors, and with an English ROM.
		Board: PT NO Z70290, MC0026B, 94V0-ECMM1, Copyright 1985 Fitted with Amphenol connectors. It has some weird resistors directly below the video connector, and an extra ferrite ring by the audio jack.
		Board: PT NO Z70290, MC0057A, Copyright 1985 An uncommon version. The cooling plate suggests that this CPC 6128 board would be downgraded for supporting the pin-outs of the old gate array. The /INT resistor, R144, has white covering to protect it from heat generated by the Gate-Array, seen at lower-left edge of the cooling plate. On 464 boards similar covering is used on VCC2 resistors. Here's also another picture.
		Shielding as found in German Schneider models





CPC6128 version 3 (cost-down)

- Size: 310x145 mm

<i>PCB Top</i>	<i>PCB Bottom</i>	Description
		Board: PT NO Z80330, MC0100A (1988) Uses 100pin SMD Gate Array (combines the old Gate Array and PAL, CRTC, and some FDC/DRAM/RESET logic in one chip). Can be fitted with four 64Kx4 RAM chips (or the normal sixteen 64Kx1 RAM chips) Printer port consists of 74LS174+74LS175 (instead of 74LS273) another picture.






CPC 464+

- Size: 282x142 mm
- Same mainboard is used in 464+ and 664+ (though not all components installed in 464+, and with different LK Links.
- Uses 160pin SMD Gate Array (ASIC).

<i>PCB Top</i>	<i>PCB Bottom</i>	Description
		Board: 2700-016P-3, MC0122B, Copyright 1990 IC16 is 74HCT02 with two extra resistors between pins 2+14 and 3+4 extra diodes near R71-R75 (below right edge of expansion port) (other picture)
		Board: 2700-016P-3, MC0122C, Copyright 1990 IC16 is 74LS27 without extra resistors other extra diodes near R71-R75, and R73 is not installed
		Board: 2700-016P-3, MC0122D, Copyright 1990 New D29/D30 (instead of the "extra" diodes near R71-R75)

CPC 6128+

- **Size: 282x142 mm**
- Same mainboard is used in 464+, but with additional components installed (extra RAM chips, FDC chips, internal/external floppy connectors, and with different LK Links).
- Uses 160pin SMD Gate Array (ASIC), and 24pin data separator.



















<i>PCB Top</i>	<i>PCB Bottom</i>	Description
		Board: 2700-016P-3, MC0122C, Copyright 1990 (other picture)(other picture)
		Board: 2700-016P-3, MC0122D, Copyright 1990 (other picture)
		Board: 2700-016P-3, MC0122E, Copyright 1990

Other Plus versions are shown in the Service Manuals (Plus series, page 5 = MC0122B, and page 16 = MC0122A).

GX4000

- **Size: 205x150 mm**
- Same chipset as CPC+, but lacks Keyboard, Expansion Port, Printer Port, Tape/Disc Interfaces.
- Additional Scart Connector and TV Modulator.

<i>PCB Top</i>	<i>PCB Bottom</i>	Description
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		Board: 2700-017P-3, MC0123A, Copyright 1990, K2
		Board: 2700-017P-3, MC0123B, Copyright 1990, K3 R153 installed (near SCART connector) handmade NR2 (between CPU and PSG) Here is another picture.
		Board: 2700-017P-3, MC0123B, Copyright 1990, K3 The same board as the above one, but without the modulator.
		Board: 2700-017P-4, MC0123C, Copyright 1990, K1 (other picture) R153 not installed (near SCART connector) D135-D142 instead of NR2, R1/R2/C2 rearranged (between CPU and PSG) bigger R181 (3 Watts), C32/D180 rearranged (near RGB monitor connector)
		Board: 2700-017P-4, MC0123C, Copyright 1990, K2 Looks same as above (only the "K2" text near the LED changed). (other picture)
		Board: 2700-017P-4, MC0123C, Copyright 1990, K2 The same board as the above one, but without the modulator.
		Board: 2700-017P-4, MC0123C, Copyright 1990, K3
		Board: 2700-017P-4, MC0123C, Copyright 1990, K4 Looks same as above (only the "K4" text near the LED changed).
		Board: 2700-017P-4, MC0123C, Copyright 1990, K4 The same board as the above one, but without the modulator.
		Board: 27...?, MC...?, Copyright 1990, K3 (without TV modulator) Version without TV Modulator installed, and with IC101 replaced by 4 transistors (used in French models; where the PAL modulator would be useless).

Another GX4000 board (2700-017P-3, MC0123A, Copyright 1990) is shown in Service Manuals (Plus series, page 24 and page 32/france).



System Cartridge (BIOS of CPC+) and Game Cartridges

- Size: 52x60 mm (more pictures)

<i>PCB Top</i>	<i>PCB Bottom</i>	Description
		Board: PT-NO-Z90903-MC0121A - With custom LKs, and double-sided soldering points.
		Board: PT-NO-Z90903-MS0201A Revision A - With custom LKs, and single-sided soldering points.
		Board: PT-NO-Z90903-MS0201A Revision B.
		Board: 2700-023P-1 - With hardwired LK1 and LK6, and single-sided soldering points.
		Board: 2700-023P-1 - Fitted with a 27C512 Eeprom. Notice the LK3 setting.
		Board: 2700-023P-1 - Another revision of the board.
		Board: Nonamed - Spanish cartridge without text-layer on PCB (otherwise same as 2700-023P-1). Older picture here.
		Board: AMSTRO1 (LK1-LK6 are called L1-L6 here) - With hardwired LK1 and LK6, and double-sided soldering points.

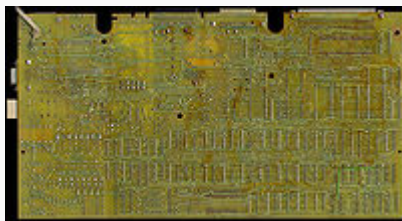
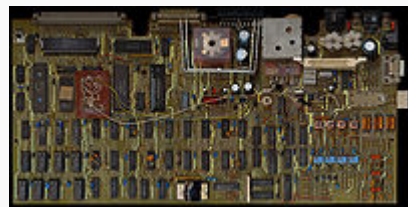
DDI-1

- Size: 160x65 mm

<i>PCB Top</i>	<i>PCB Bottom</i>	Description
		Board: MF0004B, ISS3, (C) Amstrad 1984 (more pictures) 20pin FDC Data Separator

Clones

<i>PCB Top</i>	<i>PCB Bottom</i>	Description
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KC Compact (more pictures)

Size: 370x200 mm

East german CPC464 clone (CPC 464-style 64K RAM, Tape Drive, though using 6128 BIOS version)



Board: PATISONIC ALESTE

520EX 01.003 (more pictures)

Size: ???x??? mm

Russian CPC128 clone with some additional features (512K RAM, additional video modes, RTC, SIO, etc.)

Notes

- The last letter of the **PT NO Znnnnn**, **MCnnnnX** board numbers does not seem to indicate a revision (the boards appear to be identical regardless of that letter, as long as the other digits are same). So, the last letter may indicate the manufacturing date or manufacturing location.

To Do

- <http://cpcwiki.eu/forum/index.php/topic,678.msg9509.html#msg9509> - some more precision values for Mainboard sizes. Add them to this page!

See also

- Amstrad part numbers - Part Numbers for PCBs and Chips
- Keyboard Versions
- Schematics
- Service Manuals - (cost-down 6128 is in the Amendment manual)

Forum

- <http://cpcwiki.eu/forum/index.php/topic,678.0.html> - CPC Mainboard Versions related

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