



# Tatung Einstein

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Tatung Einstein  
computer



<b>Guy</b>	<u>family computer</u>
<b><u>native country</u></b>	<ul style="list-style-type: none"> <li>▪  <u>Taiwan</u> (brand)</li> <li>▪  <u>United Kingdom</u> (development)</li> </ul>
<b>Producer</b>	<u>Tatung Company</u>
<b>Start of the sale</b>	june <u>1984</u>
<b>Introductory price</b>	£499
<b><u>CPU</u></b>	<u>Zilog Z80A</u>
<b><u>Frequency</u></b>	4MHz
<b><u>ROMs</u></b>	8-32 kB
<b><u>RAM as standard</u></b>	64 KB
<b><u>embedded readers</u></b>	1-2 3" floppy disk drives
<b><u>Video RAM</u></b>	16 KB
<b><u>SO as standard</u></b>	xtal DOS
<b>Dimensions (H x W x D)</b>	11 x 43 x <u>51cm</u>
<b>Successor</b>	Tatung Einstein 256

**Einstein Tatung** is an 8-bit home computer manufactured by the Tatung company of Taiwan but developed and assembled in England , aimed at the high-end home market and small businesses. Einstein was marketed in the UK in June 1984 and at least 5000 units were exported to Taiwan.

More expensive than other systems of its generation, the system proved to be a commercial failure. In 1985 a successor named **Tatung Einstein 256** was put on sale, which had the same fate and is even less well known than its predecessor.

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## Story

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The Tatung Einstein, named after Albert Einstein , was funded by the Taiwanese Tatung Company, designed in Bradford , under the direction of Roy Clarke, and assembled in Bridgnorth and Telford . Crystal Computers of Torquay supplied the system software. Einstein was designed for advanced home computer users, the education sector, and small businesses. It was built with commonly used components, such as the Zilog Z80 A processor , to keep costs down. Over 50,000 units were produced in the first 6 months, of which 5,000 were exported to Taiwan. <sup>[1]</sup>

It was not fitted with an interface cassette , but only the fastest and most expensive floppy drives , including at least one built-in, an ambitious and unusual choice for its time. <sup>[1]</sup> For discs, the 3" format was preferred rather than the famous 3.5", because at the time it was cheaper and easier to supply. <sup>[2]</sup>

The Tatung Einstein was released in June 1984 at a UK price of £ 499, which is quite high compared to the average 8-bit computer. The second optional internal floppy drive cost £149, further external drives cost £189. The card to support the 80 column text cost £49 and the dot matrix printer £229 . <sup>[2]</sup> In France it was launched at 7990 F including a black and white monitor. <sup>[3]</sup>

The number of Einsteins that were actually sold is unknown, but certainly not large. Soon the computer was very updated and in 1986 it could be found for less than 100 pounds. However, the publication of library software is relatively large, including utilities, business programs and games. <sup>[2]</sup>

As a news outlet, Britain's Tatung published the quarterly *Einstein User Magazine*, which was also mailed to members of Einstein Club users. <sup>[1]</sup> There were a few other small dedicated British publications, such as *Einstein Monthly*. <sup>[4]</sup>

Einstein has proven to be a good system for programming professionals , thanks to the decent keyboard, enough memory, disk drive and general reliability. Some of the major British video game companies, including Imagine , Ocean and Elite , used Einsteins games to develop other well-known systems, such as ZX Spectrum , Amstrad CPC and Commodore 64 . The program was assembled on Einstein and then transferred to the target machine for testing and debugging . Later Einstein's role passed to the Atari ST and finally to compatible IBMs. <sup>[2]</sup>

The improved and much more compact successor Tatung Einstein 256 came out in 1985. The predecessor took the code **TC01** to distinguish them. The new model was not supported by software makers of the time, and was expensive, so it was another commercial failure. Today, in the context of historic preservation, it is a rare system. <sup>[5]</sup>

## Characteristics

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Einstein Tatung is similar to, but not compliant with, the all-new MSX standard at the time. <sup>[1]</sup>

The machine is equipped with one or two built-in, forward-facing 3" floppy disk drives manufactured by Hitachi , while at the time many European personal computers were equipped with a cassette drive for storage. Cassette does not was not designed to be used. Not even a possibility. You could instead add up to two more external floppy drives. <sup>[1]</sup> Among the various other optional devices were 12" monochrome screen, 14" color screen, Tatung printer TP100, etc. <sup>[6]</sup>

The operating system provided to load from disk, is Xtal DOS, specially designed for Einstein and compatible with CP/M. The BASIC interpreter provided is Xtal BASIC, a dialect previously used for NASCOM computers. It has many common foundations with Microsoft BASIC , but adds several advanced features. According to Einstein Project Manager Roy Clarke, it was arguably the most powerful Basic around at the time of its launch, and was easier to use than BBC BASIC . However, a BBC BASIC version was also sold for Einstein. <sup>[1]</sup>

Another unusual feature of the system is that it boots from a simple system monitor called MOS (operating system machine) when powered on. This already allows you to type a few low-level commands, but the operating system must be loaded later, followed by all applications, including BASIC. <sup>[7]</sup>

Although it lacks a cassette interface and cartridge port, Einstein accepts many connections: it has two joystick ports, RS-232 serial port , parallel printer port, programmable user port and connection port bus pipes (simp "tube", from a.. reference to the BBC Micro Tube). It supports video connection to a monitor or television, with the ability to support a screen above large computer houses . <sup>[2]</sup> The audio signal is supplied directly from the main unit, which has an abnormally high mono speaker located at the front, in the center between the two floppy drive bays. <sup>[8]</sup>

A hardware extension called *Speculator* was produced by Syntaxsoft, which allowed you to run programs from the ZX Spectrum , then very popular in the UK. <sup>[1]</sup>

## Tatung Einstein 256

The Einstein 256 successor is more powerful and similar to the MSX2 standard machines . <sup>[1]</sup> The size is much smaller and in the UK it came with its own 14" color monitor. The processor is the same, but the minimum ROM has gone up to 16kb and the RAM to 256kb (hence the name). The increase concerned mostly the video memory, increased to 192KB, while the processor remains 64kB. In theory it had the graphics capabilities to be a good entertainment machine. the graphics chip is Yamaha V9938 MSX2 (512 color palette) , while the audio one has not changed. the integrated 3" floppy drive is still present, but not the compartment for the second integrated drive. <sup>[5]</sup>

Specific software for Einstein 256 is virtually unknown, apart from that supplied, which includes the new operating system EDOS, improved EBASIC interpreter, and programs and games. On the other hand, the compatibility with the software for the first Einstein has been ensured, which in fact is valid for at least 98% of the titles. <sup>[9]</sup>

## Technical specifications

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- CPU: Zilog Z80A at 4MHz
- RAM: 64 kB RAM, of which 43 are available for BASIC; RAM 16kb video
- ROM: 8kB expandable to 32kB
- Video: Texas Instruments TMS9129 controller, 16 colors
  - Character mode: 32, 40 or (with hardware extension) 80 columns, 24 lines
  - High resolution: 256 x 192 pixels

- 32 sprites of 8x8 or 16x16 size, which can be doubled
- Audio: General Instrument AY-3-8910 , 3 channels, 5 octaves
- Built-in 3" floppy disk drive, 190KB double-sided disks on each side
- integrated keyboard, 51 keys and 8 function keys
- Dimensions 43 x 51 x 11 cm (relatively large) <sup>[3]</sup> <sup>[1]</sup>

## Software

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Tatung Einstein has been fairly supplied with professional application software products <sup>[2]</sup> , even by independent vendors. Over 150 business and office programs are known (including word processing programs including WordStar , spreadsheets including Multiplan , databases including dBase ) , over 50 programming languages implemented, more than 90 different utility programs and at least 18 software educational programs / games. <sup>[ten]</sup>

## Video games

There are over 120 commercial video games for Tatung Einstein. The most active is the publisher Merlin Software, with about thirty titles. <sup>[11]</sup> We come to more than 160 games, including educational programs, often published by Solo Software and titles published only in collections. <sup>[12]</sup>

Virtually none of the games that originated on Einstein are of particular importance. On the other hand, a good number of popular video games were converted for Einstein by MSX or ZX Spectrum , including many British games, such as Batman , Elite and Manic Miner and the Konami 4 Arcade game disc ( Yie Ar Kung -Fu , Valley of the King , Time Pilot and Comic Bakery , converted from MSX). Numerous Infocom text adventures have also been published. According to Retro Gamer Magazine, some of the best games for Einstein are Valley King (released as a collectible only), Chuckie Egg, and Lazy Jones . <sup>[2]</sup>

## To note

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1. Retro Gamer 85 , p. 56 .
2. Gamer Retro 85 , p. 57.
3. tilt 20 .
4. <sup>^</sup> <sup>(EN)</sup> <sup>(</sup><http://www.tatungeinstein.co.uk/front/papers.htm><sup>)</sup> Einstein (<http://www.tatungeinstein.co.uk/front/papers.htm>) Books and Manuals (<http://www.tatungeinstein.co.uk/front/papers.htm>) , su [www.tatungeinstein.co.uk](http://www.tatungeinstein.co.uk) . (<http://www.tatungeinstein.co.uk/front/papers.htm>)
5. <sup>(EN)</sup> Tatung Einstein 256 (<http://www.computinghistory.org.uk/det/10531/Tatung-Einstein-256/>) , at [computinghistory.org.uk](http://www.computinghistory.org.uk).
6. <sup>^</sup> <sup>(EN)</sup> Miscellaneous (<http://www.tatungeinstein.co.uk/front/misc.htm>) , su [tatungeinstein.co.uk](http://www.tatungeinstein.co.uk).
7. <sup>^</sup> Jurassic News , p. 21-23 .
8. <sup>^</sup> Jurassic News , p. 19 .
9. <sup>^</sup> <sup>(EN)</sup> Tatung Einstein 256 (<http://www.tatungeinstein.co.uk/front/256.htm>) , su [tatungeinstein.co.uk](http://www.tatungeinstein.co.uk).
10. <sup>^</sup> <sup>(EN)</sup> Complete list of software (<http://www.tatungeinstein.co.uk/front/complete.htm>) , at [tatungeinstein.co.uk](http://www.tatungeinstein.co.uk).
11. <sup>^</sup> <sup>(EN)</sup> (<http://www.tatungeinstein.co.uk/front/gameslist.htm>) Einstein (<http://www.tatungeinstein.co.uk/front/gameslist.htm>) 's Games (<http://www.tatungeinstein.co.uk/front/gameslist.htm>) , su [tatungeinstein.co.uk](http://www.tatungeinstein.co.uk) . (<http://www.tatungeinstein.co.uk/front/gameslist.htm>)
12. <sup>^</sup> <sup>(EN)</sup> Tatung Einstein (<https://www.uvlist.net/platforms/detail/208-Tatung+Einstein>) , su [uvlist.net](https://www.uvlist.net).


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- (EN). *Obscura Machina # 3: Tatung Einstein* (<https://issuu.com/thiagoaugusto60/docs/retrogamer.issue.085/56>) , in *Retro Gamer* , n. 85, Bournemouth, Imagine Publishing, January 2011, p. 56-57, ISSN 1742-3155
- Physical *Evidence: Tatung Einstein Color Micro Computer* (<https://archive.org/details/JurassicNews37/page/n7>) ([JPG](#)), in *Jurassic News*, n. 37, September 2011, p. 8-29.

## Other projects

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-  Wikimedia Commons (<https://commons.wikimedia.org/wiki/?uselang=it>) has pictures or other files about **Tatung Einstein** ([https://commons.wikimedia.org/wiki/Category:Tatung\\_Einstein?uselang=it](https://commons.wikimedia.org/wiki/Category:Tatung_Einstein?uselang=it))

## external links

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- (EN). *Tatung Einstein Reincarnated!* (<http://www.tatungeinstein.co.uk/>), at *tatungeinstein.co.uk*.
- (EN). *Tatung Einstein Computer website* (<https://web.archive.org/web/20080411120900/http://members.lycos.co.uk/albertstc01/>) , at *members.lycos.co.uk*. Retrieved April 13, 2008 (archived from [the original](#) on April 11, 2008).
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