Tatung Einstein

De El Museo de los 8 bits

The **Tatung Einstein TC-01** is a home computer / personal computer of 8 bits produced by the company Tatung of Taiwan , designed in research laboratories Tatung in Bradford , and mounted in Bridgnorth and Telford , England . It is mainly aimed at small businesses.

Content

Tatung Einstein TC-01

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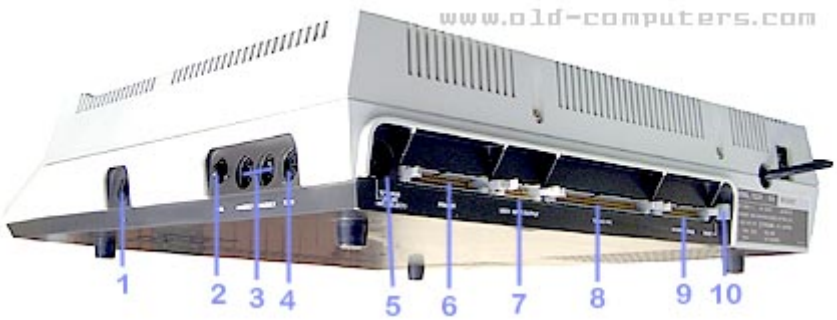
Maker	Tatung
Commercialized	1984
	characteristics
Processor	Zilog Z80
Frequency	4 MHz
Memory	64 KB RAM 16 KB VRAM 8 KB-32 KB ROM
Half	3 inch floppy disk
Audio system	General Instrument AY-3-8910
Graphic system	Texas Instruments TMS9129
screen	256 × 192 pixels , 16 colors
Entry	Keyboard 51 keys, Joystick
Connectivity	RS-232
OS	Xtal DOS , CP / M
Basic price	£ 499
Dimensions	435 mm (17.13 in) H 515 mm (20.28 in) W 115 mm (4.53 in) D

History

The Einstein was launched in the United Kingdom in the summer of 1984 and 5,000 were exported back to Taipei in the same year. A Tatung monitor (monochrome or color monitor) and a Matrix Printer were available as options, in addition to internal and external floppy drives, and an 80-column card. Through the **Speculator** (an emulator that required an external box connected to the Tube) he could run several Sinclair ZX Spectrum games

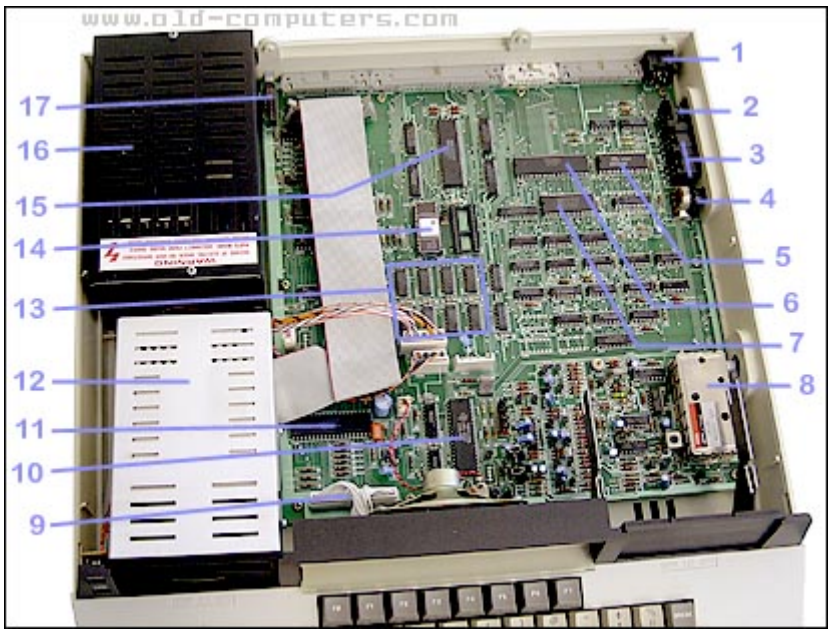


More expensive than most of its rivals, the Einstein was popular with contemporary programmers, but it was a commercial failure. [1] A later, revised version, the Tatung Einstein 256 suffered a similar fate.

Design

The machine was physically large, with one or two integrated three-inch floppy drives manufactured by Hitachi . At that time, most home computers in Europe use cassettes as storage media. Another unusual feature of Einstein is that when it starts it runs a simple machine code monitor , called MOS (Machine Operating System). It has a small library of its own software, but the standard **Xtal DOS** operating **system** (pronounced 'Crystal DOS', created by Crystal Computers in Torquay) supports CP / MIt opens the door of the largest professional

library of the moment (although until the appearance of the Amstrad CPC 664 / Amstrad CPC 6128 / Amstrad PCW the disk format is a difficulty to obtain it). It also has a BASIC interpreter , the **Xtal BASIC** . Thanks to the reliability of the machine, and ample memory, the machine proved useful so many software companies use it for programming, and then carry the code to the target machines: Spectrum 48k , Amstrad CPC , and Commodore 64 . Over time, it was replaced by the compatible IBM PC and the Atari ST as development systems.



File: Tatung Einstein (2190362580) .jpg
With analog joystick and monitor

Share many components (sound and video chip , for example) with the MSX . In fact, his successor, Tatung Einstein 256 , replaces the Texas Instruments TMS9129 (present in MSX 1) with a Yamaha V9938 (present in the MSX 2) with a smaller black box with only one integrated unit.

Technical details

- Zilog Z80 A **CPU** at 4 MHz
- **CTC** (Counter / Timer Channel) Zilog Z84C30
- **PIO** (Peripheral Input / Output) Zilog Z84C20
- **SIO** Intel 8251
- **ROM** 8 to 32 KB
- **RAM** 64 KB
- **VRAM** 16 KB directly controlled by a Texas Instruments TMS9129 graphics chip with a capacity of 32 sprites (1 color, max 4 per horizontal line). 16 colors available.
- **Sound** : General Instrument AY-3-8910 sound chip (7 octaves, 3 voices) that also handles keyboard reading
- **Housing** : 435 mm (17.13 in) white plastic rectangular H x 515 mm (20.28 in) W x 115 mm (4.53 in) D
- QWERTY **keyboard** with 51 keys and 8 function keys. Normal keys in light gray, function keys (8 in a top row), editing and specials in dark gray, ENTER in red. On the left side ESC , CTRL , ALPHA LOCK and SHIFT . On the right BREAK , two cursor keys (left / right and up / down), ENTER SHIFT , INS / DEL and GRAPH . Solo spacer. Each alphanumeric key has the two semi-graphic characters accessible via GRAPH on the bottom side(with SHIFT for the right)
- **Support** disk 3 inches; Up to 2 internal and external drives governed by a Western Digital FD1771 floppy disk controller
- **Entry / Exit** :
    1. RF / TV PAL modulator connector
    2. Volume regulator
    3. 2 DIN 7 connectors of analog joystick
    4. RS-232 interface DIN 5 connector
    5. DIN 6 connector of RGB monitor (Linear or TTL)
    6. Parallel printer port (2 x 17 IDC connector for ribbon cable)
    7. User programmable input / output connector (2 x 8 IDC connector for ribbon cable)
    8. Tatung Pipe (processor bus IDC connector 2 x 30 for ribbon cable)
    9. External floppy disk drive (2 x 17 IDC connector for ribbon cable)
    10. Reset switch
- **Motherboard**
    1. DIN 6 connector of RGB monitor (Linear or TTL)

2. RS-232 interface DIN 5 connector
3. 2 DIN 7 connectors of analog joystick
4. Volume regulator
5. USART Intel 8251 for the serial port
6. **PIO** (Peripheral Input / Output) Zilog Z84C20
7. **CTC** (Counter / Timer Channel) Zilog Z84C30
8. RF Modulator Astec PAL UHF - 591.25 MHz 1.5 mV peak synchronizations, negative modulation.
9. Keyboard Connector
10. Texas Instruments TMS9129 graphics chip (same as MSX)
11. General Instrument AY-3-8910 sound chip (7 octaves, 3 voices)
12. Diskette drive shield
13. 8 x Mostek 4564 chips for 64 KB of RAM
14. 8 KB 4764 EPROM holding the Einstein monitor
15. Zilog Z80 A manufactured by Mostek
16. Internal switching power supply 220/240 V AC 50/60 Hz 30 Watts , with 12 and 5 volt DC output that connects to the motherboard
17. Reset switch

- **Floppy drive** one or two units **Teac FD30A** singlesided, 100 tpi, 40 tracks, 10 sectors per track, 512 bytes per sector, MFM coding; 12 milliseconds of track-to-track access time, 171 ms average. Transfer rate 250Kbits / second. It is connected by flat cable to the motherboard, next to the external unit connector, and takes power from two connectors (one per unit) next to the motherboard connector for power.

Peripherals

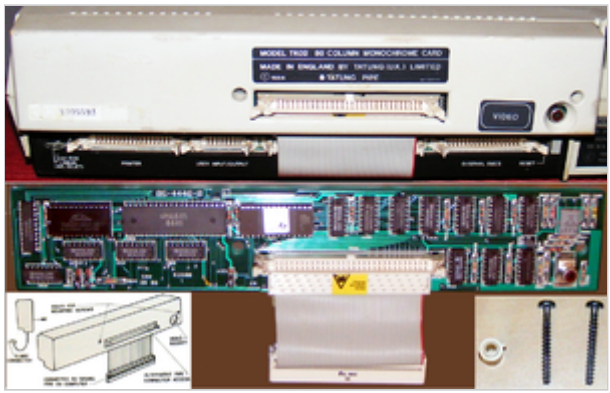
Second disk drive

The **TK01 Upgrade kit** is a second internal 3-inch floppy drive with the necessary cables.

80 column card

It is the **Model TK02** It is fixed by two screws on the back of the equipment to which it is connected by the Tatung Pipe by means of a flat cable that comes out from underneath. At its rear has a port Tatung Pipe string to further enlargement and RCA connector of composite video allows working in 80 x 24 characters, the standard of CP / M [2]

It has a UM6845 graphics chip and a Toshiba TMM2016 SRAM chip



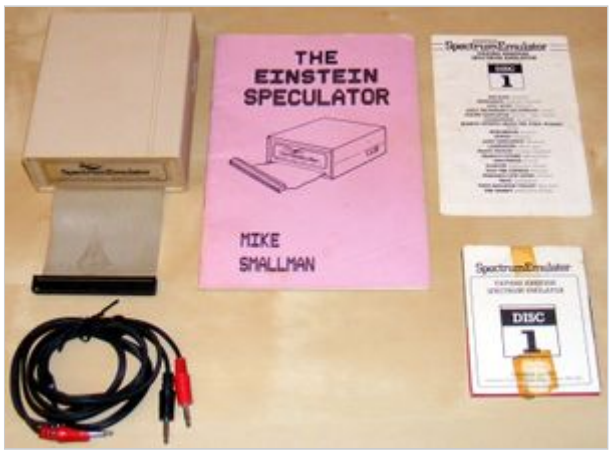
Team with the TK02. TK02 motherboard

Speculator

Marketed by SyntaxSoft is based on the emulator of the same name for Memotech MTX , but expanded. Its author, Tony Brewe, creates a version for Einstein that connects to PIPE. Inside the box has a speaker and cassette interface, along with two PALs, a Hitachi HM6116P-4 SRAM chip and 6 7400 Series chips . [3] On each disc come 4 programs:

- **SP1.COM** : the program used to load and run any of the 20 games of ZX Spectrum.
- **SPID.COM** : the utility to add a directory to a disk that has Spectrum software saved on it.
- **CLOAD.COM** : utility to pass software from a Spectrum cassette to an Einstein disk.
- **CSAVE.COM** : utility to transfer software from the Einstein disk to a Spectrum format cassette.

The Einstein Speculator explains how to modify SP1.COM to allow loading additional software for ZX Spectrum. Modifying the machine code in the Einstein is simple, thanks to its Machine Operation System. Simple modifications required by 25 other games are provided in the book. In addition, it will provide the modification code for 13 games published in the Einstein Monthly magazine. This means that with disk 1, 58 ZX Spectrum games can be run on the Einstein, many of which can be downloaded from World of Spectrum .

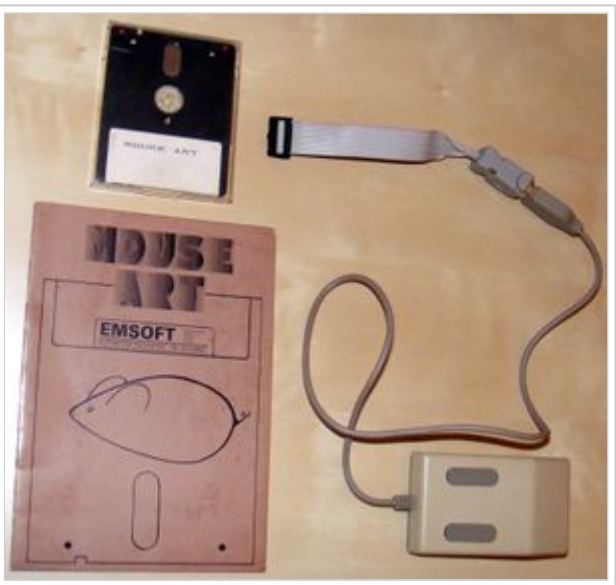


Speculator, cassette cable, **The Einstein Speculator** and disk one

Disc 1	Disc 2	Disc 3
Arcadia	180 Darts	3D Tunnel
Astronut	Ad-Astra	Android
Atic Atac	Danger Mouse in Double Trouble	Blood 'N' Guts
Daley Thompson's Decathlon	Desert rats	Chess
Flight Simulation	Feud	Countdown
Gridrunner	Gremlins	Finders Keepers
Humpty Dumpty Meets The Fuzzy Wuzzies	Lords Of Midnight	Firebirds
Hunchback	Lunar Jet Man	Hungry Horace
Jetpac	Master Of Magic	H.U.R.G. (Game Designer)
Jump Challenge	Nonterilaqueos	Lazerzone
Laserwarp	Raster Scan	Micromouse
Potty Pigeon	Rentakill Rita	Mugsy
Project Future	Rescue	Nifty Lifty
Spectipede	Robin Of Sherwood	Penetrator
Starion	Snowman	Pssst
Stop The Express	S.O.S.	Push Off
The Hobbit	Spitfire 40	Computer Scrabble
Tornado Low Level	Sweevo's World	Sorcerer Lord
Traxx	Terminus: The Prison Planet	Spin Dizzy
Twin Kingdom Valley	Way Of The Fist	Uchi Mata

Mouse Art

Mouse Art es un software de dibujo de bitmaps creado por **EMSOFT** para los Einstein que se comercializa junto con un mouse **CONTRIVER M-1 Mouse** (comercializado inicialmente para los Commodore 64/Commodore 128) y un adaptador de DE-9 al conector IDC 2 x 8 de entrada/salida programable. Recibe críticas favorables de Einstein User y es el único programa de este tipo conocido para los Einstein.



Mouse Art, ratón y cable adaptador

cable adaptador




















Mouse Art 04.jpg






Referencias

1. ↑ The Tatung Einstein en old-computers.com (http://www.old-computers.com/museum/computer.asp?st=1&c=86)
2. ↑ Tatung Einstein TC01 (http://www.nightfallcrew.com/27/12/2012/tatung-einstein-tc01/) en Nightfallcrew con una foto de la tarjeta
3. ↑ MEMOTECH The "Speculator" (http://www.primrosebank.net/computers/mtx/techlib/mtx/mtxspeculator.htm)

Enlaces externos

- 15px Wikimedia Commons hosts multimedia content about **Tatung Einstein** .
- Einstein Community Forum (http://einstein.lefora.com/)
- Tatung Einstein Computer Web Site (http://www.einstein.talktalk.net)
- Tatung Einstein Computer Group (http://uk.groups.yahoo.com/group/tatung_einstein/)
- Tatung Einstein Reborn (http://www.tatungeinstein.co.uk/)
- Tatung Einstein (http://www.cpcwiki.eu/index.php/Tatung_Einstein) at CPCwiki

Obtenido de «http://www.museo8bits.es/wiki/index.php?title=Tatung_Einstein&oldid=14302»
Categories : Pages with broken links to files | Computers with CPU Z80 | CP / M
