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Novag Micro Chess ^[5]

Novag Micro Chess, one of [Novag's](#) first [dedicated chess computer](#) with a program by [David Kittinger](#), first released in 1981. The computer has a [Mostek MK3875/42 microcontroller](#) ^[1], a second sourced single chip implementation of the [Fairchild F8 multi-chip processor](#), the 3850 [ALU](#) with 64 [byte scratchpad RAM](#), which are 64 general purpose 8-bit registers ^[2], and the 3851 program storage unit, [instruction decoder](#) and 4 [Kibibyte mask-programmable ROM](#), and 64 byte executable RAM ^[3] ^[4]. The novelty of Novag Micro Chess was a sensor pegboard with [membrane switches](#), which allows [entering moves](#) directly by pulling and sticking pieces on the board. Eight [rank](#) and [file LEDs](#) indicate [origin](#)- and [target square](#) of the move made internally by the computer.

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128 Byte Challenge

David Kittinger had to solve a similar challenge than [Mark Taylor](#) with [Mini Chess](#) to write a chess program with such less RAM. Accordingly, the program was not that strong, and had 8 levels to [search](#) one to eight [plies](#) deep. It took 110 minutes to solve that mate in three ^[6].

2k5/4B3/1K6/8/2B5/8/8/5r2 w - -

Invalid Castling

A Micro Chess prototype had a [move generation bug](#) due to [castling](#) over an attacked square, which of course occurred in its first tournament game at the [CPWTIPC 1981](#), where Micro Chess lost a game from [Chess Champion Mark IV](#) ^[7] ^[8] ^[9] :

```
[Event "CPWTIPC 1981"]
[Site "Paris, France"]
[Date "1981.05.28"]
[Round "1"]
[White "Chess Champion Mark IV"]
[Black "Novag Micro Chess"]
[Result "1-0"]
```

```
1.e4 e5 2.f4 exf4 3.Bc4 d6 4.Nf3 Ne7 5.O-
O Nbc6 6.Nc3 Be6 7.Bxe6 fxe6 8.Qe2 e5
9.Qc4 Ng6 10.a4 Be7 11.d4 Nxd4 12.Nxd4 exd4 13.Qxd4 Bf6 14.Qd5 Bxc3 15
.bxc3 c6
16.Qe6+ Qe7 17.Qxe7+ Nxe7 18.Bxf4 d5 19.Be5 {0-0 invalid castling} 1-0
```

r3k2r/pp2n1pp/2p5/3pB3/P3P3/2P5/2P3PP/R4RK1 b kq - 1 19

See also

- [MicroChess](#)
- [Mini Chess](#)
- [Move Generation with 256 bytes RAM or less?](#)

- [MyChess](#)
- [Novag](#)

Publications

- [Novag Micro Chess](#) (pdf) by [Hein Veldhuis](#)

External Links

- [ionel.cordesses - NOVAG MICRO CHESS](#)
- [Novag Micro Chess Electronic Chess Computer](#) from [The Spacious Mind](#)
- [Novag Micro Chess](#) from [Schachcomputer.info - Wiki](#) (German)

References

1. [^](#) [Mostek 3870 \(MK3870\) microcontroller family from CPU world](#)
2. [^](#) [Fairchild F8 \(3850\) microcontroller family from CPU world](#)
3. [^](#) [Fairchild F8 datasheet and application note, data sheet, circuit, pdf, cross reference | Datasheet Archive](#)
4. [^](#) David Edwards (1976). *The Mostek F8*. [Electronics Australia](#), December, 1976, [pdf](#)
5. [^](#) [Novag Micro Chess](#) from [Novag | Photo collection](#) by [Chewbanta](#)
6. [^](#) [Novag Micro Chess](#) (pdf) by [Hein Veldhuis](#)
7. [^](#) [Kevin O'Connell](#) (1981). *MicroChess - Paris Tournament*. [Personal Computer World](#), August 1981
8. [^](#) [Publication Archive](#) from [Chess Computer UK](#) by [Mike Watters](#)
9. [^](#) [Novag Micro Chess](#) (pdf) by [Hein Veldhuis](#)

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Novag Micro Chess	Jan 16, 2013
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