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Lead Inventor (HP-35)

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SlideRule ●
Senior Member

Posts: 1,635
Threads: 873
Joined: Dec 2013

06-06-2024, 02:36 PM

#1

An excerpt from **At His Crossroad** *Reflections on the Work of France Bučar*, © Springer International Publishing, ISBN 978-3-319-78331-4 (eBook), page v.

Preface

...
... It turns out that Dr. France Rode, the lead inventor of the first sophisticated pocket-size **HP-35** calculator, and Ed Repic ... were both Slovenians.

BEST!
SlideRule



EdS2 ●
Senior Member

Posts: 732
Threads: 34
Joined: Apr 2014

06-06-2024, 05:56 PM (This post was last modified: 06-06-2024, 05:57 PM by EdS2.)

#2

He's a named inventor on [several](#) HP calculator patents... I see a [news clipping](#) says

Quote:

It took many new ideas and inventions to design it, including a miniature processor, which was one of Rode's contributions to this commercially extremely successful product.

While he did not receive the recognition of having designed the first microprocessor in the world, Rode's HP-35 calculating unit had all the characteristics associated with a microprocessor, including an extensive instruction set.

so perhaps he played a lead role in the chip design or the processor design?



Steve Simpkin ●
Senior Member

Posts: 1,526
Threads: 19
Joined: Dec 2013

06-06-2024, 06:10 PM (This post was last modified: 06-06-2024, 06:12 PM by Steve Simpkin.)

#3

The hardware and software design of the HP-35 can be found in the June 1972 issue of Hewlett packard Journal magazine.

<http://hparchive.com/Journals/HPJ-1972-06.pdf>

Here is the following information for France Rode in the acknowledgement section for the development of the HP-35 .



Edit: Here is the text from the above:

France Rode came to HP in 1962, designed counter circuits for two years, then headed the group that developed the arithmetic unit of the 5360 Computing Counter. He left HP in 1969 to join a small new company, and in 1971 he came back to HP Laboratories. For the HP-35, he designed the arithmetic and register circuit and two of the special bipolar chips. France holds the degree Diploma Engineer from Ljubljana University in Yugoslavia. In 1962 he received the MSEE degree from Northwestern University. When he isn't designing logic circuits he likes to ski, play chess, or paint.

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EdS2

Senior Member

Posts: 732
Threads: 34
Joined: Apr 2014

06-06-2024, 07:51 PM

#4

Thanks!

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brouhaha

Senior Member

Posts: 729
Threads: 64
Joined: Dec 2013

06-07-2024, 08:20 AM

#5

EdS2 Wrote:

(06-06-2024, 05:56 PM)

He's a named inventor on [several](#) HP calculator patents... I see a [news clipping](#) says

Quote:

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The early HP calculator processor was a multi-chip processor (minimum ARC and CTC), so it wasn't considered in the same league as the Intel 4004, and to be fair, the 4004 slightly beat it to market in the Busicom calculator, then general commercial sale in late 1971. Both the HP chipset and the 4004 needed additional support chips, such as ROMs and a clock generator, but the the Intel 4004 had the entire CPU on one chip, while HP had it spread over two chips, until their second generation "Woodstock" ACT processor chip in 1975.

Although I don't intend to diminish Rode's accomplishments in any way, nor those of the others involved in creating the early HP calculators, it should be noted that the original HP calculator architecture in the HP-35/45/46/55/65/70/80/81 and 1722A oscilloscope was not entirely original, but was derived from an existing processor architecture from Sweda, for which Fairchild manufactured as their PPS 25 family of chips (3800 series). Sweda used it for cash registers, and Fairchild used it for calculators, but Fairchild was apparently not interested in making changes taht HP requested, so HP embarked on developing their own chip set, with design and fab partners AMI and Mostek.

The most amazing part is squeezing the full HP-35 functionality into just 7680 bits of ROM. Some people disagree with me about it, pointing to the Sinclair scientific that used only 3520 bits of ROM, but the Sinclair came two years later and had signfiicantly worse precision, speed, and functionality. I'll agree that it, too, was a remarkable achievement, but it doesn't detract in any way from the HP-35 developers' accomplishment.

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