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HP-71B

Message #1 Posted by [John Kercheval](#) on 7 June 2003, 2:01 p.m.

Any other users of the 71B out there? I have the 71, lots of modules and would like to discuss 71 topics with other users.

John in VA

Re: HP-71B

Message #2 Posted by [Daniel Diggelmann](#) on 7 June 2003, 2:34 p.m.,
in response to message #1 by John Kercheval

Hi John, Good idea. I've got only one (MATH) module but I like the HP-71B very much. I think it's the best calculator if you're interested in the HPIL. I'm mostly using it to control the HP 3421A Data Logger or the HP 3468A Digital Multimeter. For data storage I'm using an Omnibook 800CT plus docking station with the HPIL PC Card. EMU41 also works as a virtual mass mem with the HP-71B. I wish more modules were on the second hand market. It's hard to find any. The curve fitting module is one of the best I've seen. I once owned it and gave it away together with a circuit analysis module before I started collecting :(

Re: HP-71B

Message #3 Posted by [John Kercheval](#) on 7 June 2003, 4:17 p.m.,
in response to message #2 by Daniel Diggelmann

I use the Digital Cassette Drive for storage. I also use the HP41 Translator Pac. This is great as I can run all HP41 programs on it and can transfer by the IL. I am using the CMT 64K RAM module in the Card Reader Bay.

Re: HP-71B

Message #4 Posted by [Tony Duell \(UK\)](#) on 7 June 2003, 6:25 p.m.,
in response to message #1 by John Kercheval

I still use my HP71Bs (I have several of them) a lot. In fact I think it's one of the best HPIL controllers ever made. For that reason, I use it with the 3421 logger, and 82165 GPIO interface for homebrew hardware projects. I have several of the modules -- the 71B I use most of the time has the Forth/Assembler, Maths, AC circuits, and a 32K RAM module plugged in. I also have the 41 translator, finance, curve fitting, and Datacomms ROMs. HP71 BASIC Is a rather good version too, with named subroutines and parameters. Finally, of course, this is an 'open' machine -- all the internals were documented by HP in the IDS manuals -- I think they're on the MoHPC CD-ROMs, but I bought them as paper documents long before there was an MoHPC...

You can't have too many HP-71B

Message #5 Posted by [Mike](#) on 7 June 2003, 10:40 p.m.,
in response to message #1 by John Kercheval

I have 5 to 10 at any point in time. I think I have half a dozen right now. I have a couple that have CMT 128K Card Reader RAM and two 64K RAM in the front ports. Almost 300K.

I also have card readers for most of mine as well.

If I had to pick a favorite HP, it would be the HP-71B. It is still a very practical handheld for everyday use. The only drawback is that it's a little too big compared to a calculator but other than that, it's an awesome and very powerful computer.

I prefer to use the 9114 for mass storage than a digital cassette. Tapes are just too hard to find for the cassette and the 9114 isn't a lot larger. And the 71B can sit on top or right in front for a nice little package.

Re: You can't have too many HP-71B

Message #6 Posted by [Michael Meyer](#) on 8 June 2003, 2:29 a.m.,
in response to message #5 by Mike

I've said it before, but, I AGREE.

I love my calcs, all of them.

The 19C is my favorite for being spiritually admired, and the 67 is also a marvel. The 25 will always be my first love.

But, the 71B was my hobby all through med school. Despite eating left-overs from people's hospital trays and driving military ordinance (Mustang II = Pinto-- explodes on impact), I scraped up the money for a 71B.

I can still remember the first time I held it in my hand and typed in a command at the prompt. What a feeling of power! Prior to this, I had to run a stack of cards to high-level program. Now I could "blow away" those FORTRAN programs in a *personal* hand-held smaller than a stack of those cards.

And, with the 41 emulator, it has 5 calculators: 1. Basic command line math. 2. Built-in algebraic calculator. 3. RPN binary program (my favorite)...with overlay. 4. HP-41 RPN with keyboard overlay. 5. FORTH mode RPN.

(Do THAT on a 67....)

I would spray paint the overlays black, and then use white rub-on letters, followed by a clear-coat. I remember sitting at my girlfriend's apartment (now my wife of going on 17 years...) and carefully making the overlays on a coffee table.

I really only have one HP-71b. How many is too many? I think more than a couple is too many. But you can never have too many "spares"!!!!

RTN2RPN,

Michael

How many is too many?

*Message #7 Posted by **Mike** on 8 June 2003, 1:24 p.m.,
in response to message #6 by Michael Meyer*

When you have more 71b than you have modules and accessories-)

I have some with 128K Card Reader RAM. I don't like swapping things. So, when I want a card reader, I just use a different 71 with a card reader.

Also, you can't plug every module into a single 71B. Most of mine are loaded with RAM and only have 1 or 2 slots for application ROMS. So, I have one for 41 translator stuff and others for other things.

I guess I'd rather be lazy and have more, than efficient and have fewer :-)

Mike

Maybe U need one more ...

*Message #8 Posted by **Norm** on 8 June 2003, 2:40 p.m.,
in response to message #7 by Mike*

Maybe U need one more ...

It looks like a cool unit, but I suppose I have got an extra sitting here.

It's a shame but we all have to pick our favorites.

I am still most favorable to 34C, didn't have time, so far, to try out this 71B.

analogee@gte.net

I'd like to have at least one...

*Message #9 Posted by **Vieira, Luiz C. (Brazil)** on 8 June 2003, 3:05 p.m.,
in response to message #8 by Norm*

Hi, folks;

I always had the 71's as one of the fanciest designs ever. It looks as Voyagers' dad (or mom?), and Voyagers also have their place.

What bothers me about the 71 is the BASIC language. I know how to program in BASIC but I think it is (sorry, BASIC lovers!) boring... I know HPBASIC is a heavy implementation, and it is closer to HP85/75 BASIC (is it correct?). If it is at least C-based... Well, as a computer, even portable, battery-operated, it should have (and it has) a high-level programming language; RPN would be of no use for such a "big guy".

But it should not look so nice... I confess I'd like having one HP71 more for its look than to its functionality.

I'm being honest.

Luiz C. Vieira - Brazil

Re: I'd like to have at least one...

Message #10 Posted by **Tom Scott** on 8 June 2003, 3:19 p.m.,
in response to message #9 by Vieira, Luiz C. (Brazil)

Hi,

I like the looks and solid feel of the 71 as well as the functionality. Unfortunately (some 15 years ago) I sold mine along with various modules, etc. Realizing my mistake I purchased a "new" one from Educalc (while they were still in business) a few years ago.

Are modules (e.g., curve fitting) still available anywhere for the 71?

Tom Scott - Lander, WY

I always thought...

Message #11 Posted by **R Lion** on 8 June 2003, 3:26 p.m.,
in response to message #9 by Vieira, Luiz C. (Brazil)

...the same!!: it looks very nice, like a big Voyager...but BASIC, and I prefer my 48GX with 1280Kb and RPL (sorry, couldn't resist >-)

Well you can try [here](#) (Sure you knew it yet)

Raul

HP-71B's BASIC boring !?

Message #12 Posted by **Valentin Albillo** on 8 June 2003, 7:12 p.m.,
in response to message #9 by Vieira, Luiz C. (Brazil)

Luiz posted:

"What bothers me about the 71 is the BASIC language. I know how to program in BASIC but I think it is (sorry, BASIC lovers!) boring... and it is closer to HP85/75 BASIC (is it correct?)"

I beg to disagree. HP-71B's BASIC is anything but boring, and for its time, it was (and still is) one of the best and most comprehensive BASIC dialects in the world. By itself, it has more than 240 statements and incredibly advanced features, but when extended with the Math ROM (which was meant to have been an integral part of the machine, ROM ID 2) and the HP-IL ROM, it's simply mind-boggling. Just to name a few:

- Full set of mathematical functions and operations, defined for either scalar values (in three precisions, INTEGER, SHORT, REAL), complex values, real matrices and complex matrices.
- Full 12-digit, 1000-decade range, the only BASIC ever to implement IEEE management of Infinities, NaNs, and denormalization. No other dialect or language does it today, AFAIK.
- Single-line and multi-line user-defined functions and subprograms, passing parameters both ways by value or reference, and allowing recursion and separate environments.
- Multi-file, multi-type RAM file system, with independent RAM possible, handles several kinds of program and data files, including language extension files and binary programs and subprograms
- Event-driven programming possible, including programmable timers, errors, I/O events, hardware and software polls, etc.
- Incredible functionality for math, including Solve and Integrate with recursion allowed, Fourier transforms, polynomial root finding, gamma, hyperbolics, random number generation, and base conversions, to name a few.
- Incredible functionality for I/O, the best HP-IL loop controller anywhere, can control up to 3 loops simultaneously, full range of both low-level and high-level I/O commands, full range of boolean operations.
- Soft and hard configuration to accept any number of external ROMs and RAM, up to 512 Kb addressing range.

and I could go on and on and on ... In short, there's nothing to even touch it, least in such a portable, small machine. I only find two flaws in its BASIC implementation: it doesn't allow two-dimensional string arrays, and it doesn't allow long names for the variables. And I guess even those could be overcome with a suitable LEX (language extension) binary file.

In real life, I've found that I can program most anything math related (incl. engineering problems, etc) in very few lines of HP-71B BASIC, and the resulting program is both easy to create and simple to understand and extend in a future date. Wish the same could be said of other languages/dialects.

As an example, I wrote a chess mate finder (which can in principle solve any "mate in N" chess problem) in some 90 lines of BASIC code. And the program listing is anything but boring, and easily understandable. Try that with your favorite calc language ! :-)

Best regards.

Edited: 8 June 2003, 7:19 p.m.

Re: HP-71B's BASIC boring !?

*Message #13 Posted by [Vieira, Luiz C. \(Brazil\)](#) on 8 June 2003, 7:28 p.m.,
in response to message #12 by Valentin Albillo*

Hi, Valentin;

thank you for your (as always) clear explanations. I read about HPBASIC in an HP85B folder I have. I was aware of the fact it has many features, but I was not aware of some you posted.

Please, don't be mad! I have no HP71, I do not know HPBASIC; as I wrote, I find BASIC boring, not HPBASIC boring. But I am always ready to try...

I like structured languages, I do not like GoTO's and LaBL'e's. I prefer "{" and "}" or "«" and "»" to hold complete clauses and sequences. As mentioned in all RPL-programming manuals (except HP49G's), one start point and one end point only. I know how to program in FORTRAN, BASIC and RPN (FOCAL?) but after RPL and C/C++ I found other programming directives.

Best regards, Valentin.

Luiz C. Vieira - Brazil

Edited: 8 June 2003, 9:17 p.m.

Re: HP-71B's BASIC boring !?

*Message #14 Posted by [Valentin Albillo](#) on 9 June 2003, 5:09 a.m.,
in response to message #13 by [Vieira, Luiz C. \(Brazil\)](#)*

Luiz posted:

I read about HPBASIC in an HP85B folder I have. I was aware of the fact it has many features, but I was not aware of some you posted.

It's understandable because reading that HP85B folder will mislead you into thinking HP-71B BASIC is very similar to Series 80 BASIC (HP85, 86, 87, ...).

That's far from the truth. HP-71B's is a much improved BASIC dialect, far surpassing the one used in Series 80, even when using plug-in ROMs. Its advantages and distinguishing features are far too numerous to comment, but rest assured that reading about HP85 or HP86 BASIC will not give you an useable idea of the power and advanced capabilities of HP71's BASIC.

If you've got the HP71B manuals (Owner's Handbook and Reference Guide) I suggest you have a detailed look at them. After that, reading the 71B Math ROM Owner's Handbook is an enlightening delight, and further reading the HP-IL ROM manual will show its awesome I/O and controlling capabilities.

I'm confident you will see for yourself just how poor a picture that HP85B folder gave you, and just how HP-71B BASIC is the best BASIC for a pocketable computer, bar none, and one of the best high-level languages for technical applications, if not the very best. Wish it would be available for PCs ...

Best regards.

Edited: 9 June 2003, 5:09 a.m.

Re: HP-71B's BASIC boring !?

*Message #15 Posted by [Gordon Dyer](#) on 8 June 2003, 7:36 p.m.,
in response to message #12 by Valentin Albillo*

How about posting your Chess Mate program for all of us 71B lovers...

HP-71B Mate Finder program

Message #16 Posted by [Valentin Albillo](#) on 9 June 2003, 5:25 a.m.,
in response to message #15 by Gordon Dyer

Gordon posted:

"How about posting your Chess Mate program for all of us 71B lovers ..."

Thanks for your interest. A simple post of the listing wouldn't do for me because, as you may know, I'm all for proper, detailed documentation, kinda perfectionist. I'm about to create a web site of mine dedicated to HP calcs, and this particular program will be available there (together with many others), including extensive documentation, diagrams, sample problems solved, the works.

Also, it might be the case that I'll submit it to HPCC to be published in a next issue of their Datafile magazine, so you would be able to read about it there as well, should publication occur before my site gets the green light. In either case, I will post a message to this forum to let you know.

Best regards.

Re: HP-71B Mate Finder program

Message #17 Posted by [Gordon Dyer](#) on 9 June 2003, 5:47 p.m.,
in response to message #16 by Valentin Albillo

Thanks, I am looking forward to seeing your new site! But if you are willing, then email me the program with an explanation?

Re: HP-71B's BASIC boring !?

Message #18 Posted by [Michael Meyer](#) on 9 June 2003, 1:00 a.m.,
in response to message #12 by Valentin Albillo

Luiz, my friend,

Please e-mail me your address again, and I will see to it that you have an HP-71 to "try out". (Alas, to be honest, I probably do have, "too many". I went a little "overboard" last year as it is my favorite machine, and I now have several "spares".) Thanks to a nice gesture by Mike Davis, who sent me a couple too beat up to sell, I was able to give one to a high school buddy of mine, and still have one left I can send to you. It is certainly not "mint", but is fully functional, and is still a beauty to look at.... in my opinion.... it even has the IL module so you can use your HP-41 peripherals with it.

I want to see if you feel differently about the 71 after you've used it, also!

Giving back a small amount of what I've received here, Michael

You have mail...

Message #19 Posted by [Vieira, Luiz C. \(Brazil\)](#) on 9 June 2003, 1:48 a.m.,
in response to message #18 by Michael Meyer

Hi, Doc;

After a public "Thank you so much!", I just want to tell you I sent you an e-mail with a complete text.

Best regards, Doc.

Luiz C. Vieira - Brazil

Lucky man! ;-) (no text)

Message #20 Posted by [R Lion](#) on 9 June 2003, 1:57 a.m.,
in response to message #19 by Vieira, Luiz C. (Brazil)

.

It's gonna be my community compromise

Message #21 Posted by [Vieira, Luiz C. \(Brazil\)](#) on 9 June 2003, 2:06 a.m.,

in response to message #20 by R Lion

Hola, Raúl;

It's gonna be my turn, so I'll try to follow and, if possible, help others with another model. I can, as you know, help with Woodstocks, Voyagers, Coconuts, Spices and a few Pioneers. In a few days I'll be delving into a Topcat, and when time comes, I'll be posting about the HP71B.

Paraphrasing our good friend, Doc. Mike: I'll try to give back a small amount of what I've been receiving here. Mostly what I received off-line.

Best regards.

Luiz C. Vieira - Brazil

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