Capturing Screens with INPRT

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Having a growing collection of HP handhelds, one of my favourite and most useful applications is HP's INPRT program for the 48S/GX. It receives IR printout from all those models capable of printing to the 82240A printer – a fast and convenient way to transmit and save valuable data and program listings. INPRT has one limitation, though: everything received, including graphics, is returned to the stack in the form of a string. The format used to encode graphics is explained on page 23 of the printer's manual: the escape sequence *27 x* is followed by *x* characters (up to 166) "whose decimal values determine where dots are printed in each column." Aside from printing it, little can be done with such a string. That's why I've written a program than converts it to GROB form, which can then be easily converted to any common graphics format by a wide variety of applications. The program is part of a library that can be downloaded from the club's website. It is not a standalone program because I had to include a modified version of INPRT: since it assumes that the incoming bytes would print with the Roman 8 character set, it remaps them to the 48's ECMA 94 set, which corrupts the graphics being transmitted. The original functionality of INPRT is retained, though, by providing the command REMAP, which should not be used when receiving graphics or when receiving data from calculators that also use the ECMA 94, such as the 38G. The library runs on the 48S/GX [1] and is quite fast since it is written in machine language.

Since screenshots of old calculators are only good for illustrating articles on old calculators, let me illustrate my library with a bug report. On my 18C [2] (2744A), a bug shows up when "undoing" a chain calculation:

Suppose you want to do a simple arithmetic calculation using the keys +, −,×, ÷ or ^. Say 750×12.

Now, without pressing = or INPUT, press one of those operators again. The result of the previous calculation is displayed, ready to be used in the new calculation.

But you changed your mind. You really don't want to do the second calculation, so you press ◀:

[1] I think I'll wait a bit before buying the 49g+ … As Ben Salinas, winner of the 2003 "Create a Calculator" contest, wrote: "HP is not making their new products for those who already have 40 calculators"!

[2] These screenshots were actually taken on a 19BII that was "solving" the formula FIN+BUS+…+MATH=0, because there is no way to print the whole screen on the 18C. The bug is not in the 19BII, though.
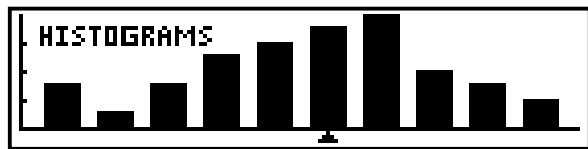
Here's the bug: press STO *n* (n=0...3):
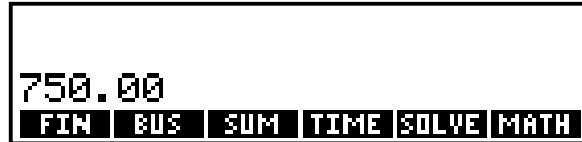
The *first operand* of the initial calculation is *displayed*, but the number stored in Rn, 9000, is correct. Neither DISP nor PRNT redress the display; to do so just press RCL *n*:
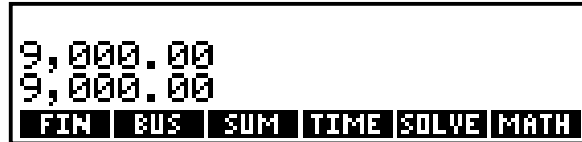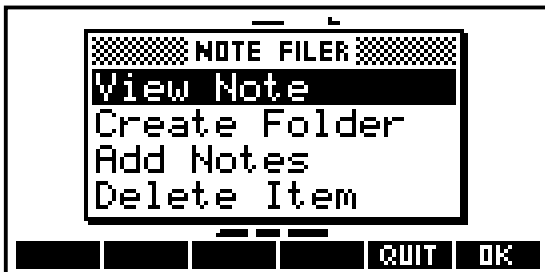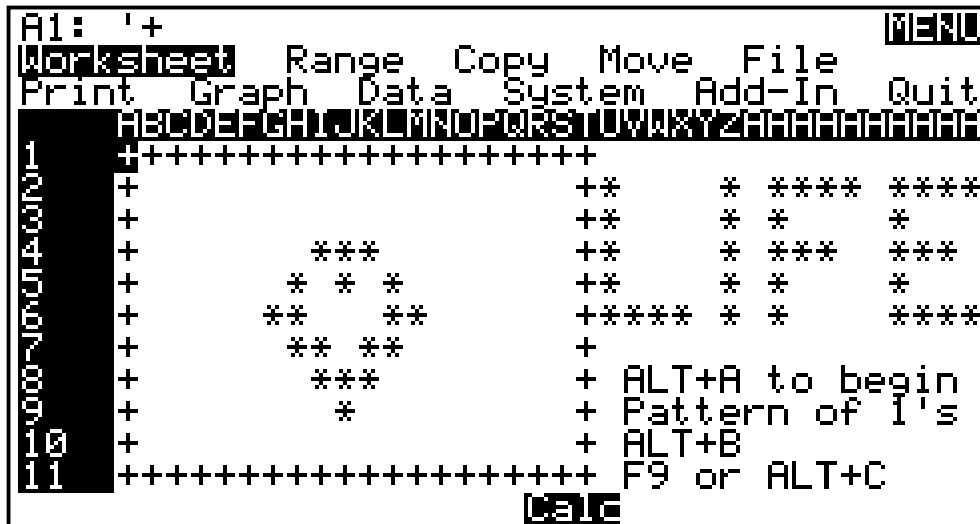

A few examples

Screenshots of the 19BII's built-in DEMO, transmitted by ON-PRNT.

Screenshots from the 28S (ON-L) and 42S (by inserting the PRLCD command in a program).

A 39G screen captured by pressing ON-PLOT and then executing PRVAR G0. On the 38G and 39G, ON-1 always dumps to the serial port.

A 95LX screen printed by HP's TSR program IRPRTSC.COM Shown is a 95LX version of the 100LX 1-2-3 program in Datafile V13 N1 page 15, by Peter Gatenby.