



**FA-20 interface**

Each of Casio's pocket computers can be attached to an interface of this type. This model allows the FX-750P to slide neatly into the recessed space. The FA-20 comes with rechargeable batteries and a mains adaptor for £80

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cartridge, of the same type used by the FX-720P, but it has a slot for a second cartridge as well. This means it can have its memory capacity expanded to up to eight Kbytes. The machine is 185 mm (7 1/4 in) wide and weighs a mere 250 grams (9 oz). Unlike the FX-720P, the Shift and Function keys have to be used at the same time as the alphabetic key.

Ten of the keys have important constants programmed into them: the velocity of light, gravitational acceleration of the Earth, Planck's constant, Boltzmann's constant, Avogadro's constant, the elementary charge, the atomic mass, the electron mass, the gravitational constant and the molar volume. Physicists and chemists use these numbers frequently in calculations and having them fixed in memory saves the trouble of having to remember them and key them in. The computer also includes functions not normally found in BASIC: six hyperbolic functions and a set of statistical functions including standard deviation, linear regression and correlation. The BASIC is improved in several other ways so that it would not be out of place on many home computers.

The third pocket computer from Casio is the recently-launched £139 PB-700. This has a 20 character by four line display and four Kbytes of memory. The memory can be expanded up to 16 Kbytes using memory packs that plug in the

underside of the computer. It is nearly 200 mm (8 in) wide and weighs 315 grams (11 oz). Like the other pocket computers it comes with a soft case to protect it.

The PB-700 has a similar keyboard to the FX-750P, except that it has a Caps key instead of a Function key. While this key is held down the computer produces lower case letters. The machine's version of BASIC is similar to that of the FX-750P, although it does have a few extra commands to draw graphics on the LCD, which has a resolution of 32 by 160 dots.

The BASIC also includes commands to draw graphics using the optional colour printer/plotter and cassette interface unit called the FA-10. This clips onto the computer and costs £194. It uses four different coloured ball pens to draw text and graphics on paper 115 mm (4 1/2 in) wide. The BASIC commands allow the printer/plotter to draw lines, circles and axes for graphs.

The FA-10 also has a cassette interface built into it, allowing it to use an ordinary cassette recorder to save programs and data. Considering how small the computer's memory is, this is a very useful facility. For an extra £70, a tiny cassette recorder can be fitted into the printer/plotter giving a complete computer system small enough to be carried anywhere. A separate Centronics interface is also available (priced at £50) to allow standard computer printers to be used with the PB-700.

Cassette interfaces and printers are also available for the FX-720P and FX-750P. The FX-720P uses the FP-12S printer. A separate unit, the FA-3 acts as an interface for a cassette recorder. The FX-750P uses the £80 FA-20, which is a tiny printer and a cassette interface combined. It has a space to store a memory card and comes with rechargeable batteries, a mains transformer and a protective case.

All three computers come with extensive manuals. These contain all that is needed but they are obviously translated from Japanese and are oddly worded in many places. They are not unusable, but they can be confusing to the beginner. Another problem is that there is almost no software available for these computers. Owners will have to write their own or copy the sample programs listed in each machine's manual.

PRODUCT	PRICE	SIZE	WEIGHT	MEMORY	DISPLAY	REMARKS
FX-720P	£60	165x85x15mm	210gm	2K	1 x 12 ch	Built-in database. Numeric keypad
FX-750P	£100	185x85x15mm	250gm	2K	1 x 24ch	Second cartridge slot. Physical constants programmed in. Expanded BASIC
PB-700	£139	200x85x15mm	315gm	4K	4 x 20ch	Graphics capability. Printer/plotter available

