ORDER FORM Please complete and return to:- Morley Electronics
Unit3 Maurice Rd. Industrial Estate / Wallsend / Tyne & Wear / NE28 6BY

Morley Teletext adapters
           Qty. Morley Teletext adapters   at £ 99.40 inc. VAT.
           Qty. Optional power supply   at £ 9.95 inc. VAT.
           Qty. Teletext utilities on Disc   at £ 5.95 inc. VAT.
           Qty. Electron Teletext adapters at £149.95 inc. VAT.
           Qty. Optional Electron UHF pack at £ 27.95 inc. VAT.
Please delete software on ROM/SWR

Ramdisc
           Qty. 1 Megabyte Ramdisc   at £199.95 inc. VAT.
           Qty. 2 Megabyte Ramdisc   at £349.95 inc. VAT.

Eprom programer
           Qty. Eprom programer v.1   at £ 18.95 inc. VAT.
           Qty. Eprom programer v.2   at £ 27.95 inc. VAT.
Please delete software on ROM/SWR

Software
           Qty. M/B software Design 7   at £ 8.95 inc. VAT.
           Qty. M/B software Desfax   at £ 24.00 inc. VAT.
           Qty. M/B software Master copy   at £ 12.95 inc. VAT.
           Qty. M/B software Master copy ROM at £ 14.95 inc. VAT.
Please delete 40/80

       Total £.....   ACCESS/VISA NO. ....
NAME............................. PHONE............. CHEQUE NO..............
ADDRESS...
....POSTCODE........

Please add £ 3.00 post and packing on Ramdisc and Teletext adapters
   "   " £ 2.00   "   "   "   " Psu and Eprom programmmers
   "   " £ 1.00   "   "   "   " Software.

THE HARDWARE BBC/Master version

The adapter is housed in a plastic disc drive style case, similar in colour to the BBC micro. It connects to the User Port via a 4-way ribbon cable and can take its power either from the computer or from the optional power supply. The very latest teletext IC's are used, which will be able to handle all developments in teletext (eg: full field. 8 bit. 2k pages. level 2 interface etc.). The adapter also uses the latest high-gain tuner with computer - controlled digital tuning controls. (Any number of channels can be accessed by simply modifying the terminal software).

THE SOFTWARE

The 16k ROM software supplied means that no user-RAM is required, and all normal OSCLI commands are vailable. The new * Commands can be used from BASIC and included in your own programs. You can, therefore, use your own Teletext editor programs with the unit.

        *Page nnn selects a Teletext page
        *BBC1 *BBC2 *ITV2 select channels
        *SEE displays a Teletext page

The HOLD PAGE and REVEAL features are implemented, and pages can be saved to disc under your own filenames. Telesoftware is catalogued and selected from the Menu page, and the programs are easily downloaded.
Two new OSWORD calls are provided to allow you to access the adapter directly from your won software. This feature will become even more important as new developments occur.
This highly advanced unit is simplicity itself to operate, and is compatible with BASIC 1&2 and OS 1.0 upwards. A comprehensive instruction manual is included.

FEATURES

* Advanced design uses the latest technology will handle ANY future enhancements to the Teletext system eg:-full field:8 bit data transfer:2k pages etc.

*Simply plugs into user port and power output (optional power supply available)

*Low power consumption , less than 200ma. Optional power supply available.

*User friendly menu driven software including extended OSCLI and Osword commands for access from BASIC programs

*No user-RAM required (PAGE remains at default value)

*FREE Telesoftware, no access charges. (at present updated weekly.)

*Save selected pages to disc/tape for later retrieval

*Full access to all Teletext services and channels eg:- CEEFAX ORACLE 4-TEL

*Software available on ROM or sideways RAM format disc.

*Basic 1 & OS1.0 compatible

*Gives you a real-time clock at your disposal (*TIME)

*Free software upgrades to allow for any enhancements to the teletext service. Eg:-extra channels, full field data on cable & satellite systems etc.

*Easy to follow comprehensive user guide

*No hardware limitations, it can for example receive virtualy unlimited numbers of channels.

*Works with Solidisc SWR.

*Utils disc available including printer drivers allows pages to be selected and dumped direct to a printer (no more TV or Radio Times to buy)

ELECTRON TELETEXT ADAPTER

THE HARDWARE

The ADAPTER is housed in a plastic disc-drive-style case, similar in colour to the BBC Micro. It connects to the interface 1. The very latest Teletext integrated circuits are employed, together with a surface acoustic wave filter and a high-gain tuner module. These advanced components have reduced the total chip count to only seven, and also ensures that the unit will be able to cope with any future advances in the Teletext service.
There are no adjustable controls to bother with, since the software provides complete control of channel selection and tuning.
Simulated Mode7 display is achieved using the on-board Teletext display controller, which includes an enhanced character set and allows a higher quality display with extra control features, such as alpha black, true double height, and three different languages. This feature also allows large Text 'adventure type' programs written for ths BBC to be run on the Electron.
Display is achieved via the RGB output from the adapter, with an optional UHF modulator for users without monitors.
The sensitivity of the unit is high and no problems should arise if your TV reception is otherwise satisfactory. The use of set-top aerials, however, is not recommended.

THE SOFTWARE

The Software is supplied on a 16k EPROM, already installed in the small unit which plugs into the interface 1. Around 100 new * Commands can be used from BASIC and included in your own programs. You can, therefore, use your own Teletext editor programs with the unit.
The 'HOLD' page and 'REVEAL' features are implemented, and pages can be saved to disc/tape under your own filenames. Telesoftware is catalogued and selected from the Menu page, and the programs are easily downloaded.
Two new OSWORD calls are provide to allow you to access the adapter directly from your own software. This feature will become more important as new developments occur.
This highly advanced unit is simplicity itself to operate and comes with a comprehensive easy to follow manual.

DESIGN 7

BBC MICRO MODE 7 SCREEN DESIGN PROGRAM

For designing simple MENU pages, to full CEEFAX/ORACLE-standard screens. This versatile program is an invaluable aid. Designs can be *SAVEd to disc as automatically-numbered files, or the program will convert the screens into BASIC procedures. Features include:

*AUTOMATIC DOUBLE-HEIGHT text - easy standard double-height!
*BIGTEXT - three lines high.
*Supertext - eight lines high - the standard character set 'magnified'.
*Word-processor-style insert/delete characters & lines with character repositioning.
*'wrap-around' SIDEWAYS SCROLLING for easy positioning.
* Instant COLOURED BACKGROUNDS - can be used to draw bar-charts or complicated colour overlays.
* FRAMES - in 7 colours - multiple frames can be instantly drawn, one inside the other.
* BOXES - 1 to 37 characters wide - for captions etc.
* COLUMNS - duplicate any character down the screen.
* PIXEL PLOTTING - plot/unplot 'pixels' individually. 'Invert' facility produces instant reversal of pixels in any graphics shape.
* Reload & edit previous designs or produce duplicates.
* Duplicate/alter/erase marked sections of screen.
* 'Cut & paste' - save screen sections & reload at cursor.
* Global or marked-section code change - change any character for any other - instant colour changes.
* Constant status line giving cursor positions, character at cursor, & ASC11 value.
* Interfaces with the new MORLEY ELECTRONICS TELETEXT ADAPTER - CEEFAX/ORACLE pages can be selected and dropped into editor screen for alteration, saving, conversion to BASIC. Change TV channels from within program.
*Full manual supplied.

*** Many other useful features too! ***

DESFAX 7 TELETEXT EMULATOR

This new package incorporates the versatile DESIGN 7 screen designer, and enables you to run your own CEEFAX/ORACLE-style system with pages you design yourself. Interfaces fully with the highly rated, MORLEY ELECTRONICS TELETEXT ADAPTER

Page selection is by 3-digit number, and HOLD & REVEAL are available. 100 pages can be held on a 40-track disc, or 200 on an 80-track disc.

A powerful CAROUSEL facility permits continuous slide-shows, with each individual screen being displayed for its own pre-set time (up to 254 seconds). Only one disc access is made for each 16 screens.
This greatly reduces wear and tear on equipment.

Smooth ANIMATION is possible (16 screens in a fraction of a second).

Text can be printed at variable speeds to give eye-catching effects.

Built-in text and graphics printer dump routines.

Supplied on 2 discs, with a 22 page manual & keystrip.

DESFAX 7 beats all other systems for ease of use and versatility.

EPROM PROGRAMMER

The new Morley EPROM PROGRAMMER allows 8, 16, and 32k EPROMS to be programmed easily and fast.

User friendly menu driven operating software is available on either ROM or disc allowing the option to blow, verify, view, alter, or check for erased EPROMS.

Available in two versions:-
version 1 (standard) uncased with standard DIL socket
version 2 (deluxe) cased with ZIF socket.

The Hardware

The RAMdisc is housed in a cream disc drive case, approx. 6"x2"x12" with a seperate 'mains plug' style power supply. The RAMdisc does not use any power from the BBC. The power supply is intended to be left connected to the mains at all times. In case of mains failure a battery backup is provided which will hold the data for approx. 15 minutes (larger-capacity backup is available). 'Disc' data storage capacity is 1,048,576 bytes unformatted see memory map for more information. The RAMdisc is connected to the micro by a 1 metre ribbon cable via a 34-way 1 Mhz bus IDC connector. Power consumption is approx. 600ma at 5v.

The Software

The RAMdisc filing system is a 'wedge' ROM which must be installed in a higher priority socket than your DFS. All DFS commands will be unaffected except those intended for the drive number the RAMdisc replaces. The default drive is #4, but this can be redefined at any time under software control. Drive numbers from 0 to 9 are accepted, and even if a drive is already connected which responds to the selected number as, for example drive #0, the RAMdisc will take priority, allowing auto-boot of commercial programs. A 'sector' editor is included, with other utilities to simplify backup and long (>200k) file copying. The ROM will automatically copy the entire contents of BBC RAM from &200 to &7FFF whenever any 'destructive' commands are intercepted, such as BACKUP, COMPACT and COPY. This applies to commands intended for the DFS, as well as the RAMdisc. This should prevent the program you just spent 3 hours writing being lost when you found there wasn't enough room to save it to disc, and tried *COMPACTing !. The BBC's RAM can also be saved by an interrupt-driven routine activated by a " command. The entire save operation for the 26K of user-RAM takes about 0.2 seconds. The RAMdisc ROM should be compatible with most DFS's, certainly all those which accept OSWORD &7F without problems. This means that no trouble should be experienced with the new double-density systems which have an OSWORD 7F 'emulator' for Acorn compatibility.
A 2 Megabyte version of the RAMdisc is now available, also an expansion unit which will allow a number of 'drives' to be connected to the 1 Mhz bus, allowing a maximum capacity of 16 Megabytes with one expander or, by connecting up to 8 more expansion units to the first 128 Mb is possible (Though we consider 64 Mb to be the 'sensible' limit......).

1 Megabyte RAMdisc memory map

```
----------------------------
:                          :
:    32k for user's own    :  The top 64k is available for the user's own
:    programs etc.         :  programs to store data etc. in, plus the
:                          :  user's RAM backup to prevent accidential
----------------------------  erasure of valuable data.
:                          :
:    32k store for BBC     :
:    user-RAM              :
:                          :
----------------------------
:   CRC for last 64k-1/4k  :  a CRC check for the last 255 'sectors'
----------------------------
:    Drive varibles-1/2k   :  Various info. on drive format, password etc.
----------------------------
:                          :
:                          :
:    Lots of RAM !         :
:                          :
:                          :
----------------------------
:   CRC for last 64k-1/4k  :  1 'sector' in every block contains CRC checks
----------------------------
:                          :
:                          :
:    First block of data   :  Another 65536 bytes !
:    64k long, as are the  :
:    next 24 blocks.       :
:                          :
:                          :
----------------------------
```

TECHNICAL INFORMATION-:

```
        Power consumption:
                Active:       650mA 5v
                Standby:      400mA 5v
           Supplied PSU:      9W 240v

Capacity - unformatted:       1048576 bytes
Formatted as a RAMdisc:       917504 bytes
  Formatted for utils:        up to 1048576 bytes depending on
application

             Dimensions:      6"x2"x12"
                    PSU:      2.5"x3"x4"
      Weight - RAMdisc:       700g approx.
                P.S.U.:       1Kg approx.

         Battery backup:      110mAH PP3 Ni-Cd battery
                              Optional sealed lead-acid backup.

     P.S.U. Backup:
                    PP3:      15 Mins. approx. (8 Mins 2Mb version)
               Lead-acid:     Optional capacities up to 20 hours.

             Workspace:       64Kbytes, 64k block &0E (ID-&26)
             Catalogue:       64Kbytes, block &0F (ID-&27)
    Catalogue capacity:       2,709 entries of 24 bytes
```

Down loading

Robert Leggat reviews an adaptor for recording computerized information off Teletext

Morley Teletext Adaptor

Morley Electronics, Unit 3, Maurice Road Industrial Estate, Wallsend, Tyne and Wear, NE28 6BY (tel: 091-262 7507).

One of the many features of the BBC Micro has been the capability, given suitable equipment, to receive Teletext information and in particular to record or "download" information and software for use in school or home. For the past couple of years software programs have been available on pages 705ff, and some good ones have been available free of charge. Recently the service has moved to BBC2, and new software is transmitted each week.

The problem, however, was that when the Teletext adaptor, which is required to receive the programs, was eventually produced, its price had soared from a promised £100 to £225 including VAT, with the result that very few schools felt it was worth purchasing. In addition, it was designed in such a way that, although it was robust, it was easy to put it out of tune accidentally. Then, to cap it all, users were informed that the original software now needed a "patch", and the downloading procedures became far too complex for any but the more technically minded.

Acorn has since reduced the price of the adaptor to £149, but even now it represents rather poor value for money, and the downloading procedures need considerable simplification if Teletext is to become popular.

At long last an adaptor has been produced which is not only cheaper, but which makes downloading child's play. The Morley adaptor is about the size of a slim disc drive. It connects to the BBC Micro via the user port, and its power may be obtained from the auxiliary supply (though as this is often used for driving disc units, an additional power supply might be preferable).

Software is available either on ROM (Read Only Memory) or on disc. Tuning to the frequencies in one's area is simple and automatic, and the unit appears to be much more sensitive than the Acorn one. Once the stations have been located, the information is automatically saved to disc or tape.

The command *TTEXT automatically selects BBC1 and presents a simple menu which will enable one to select any of the four channels, and any page; these may be stored or printed.

It is when one downloads a program that the Morley adaptor is so superior to the Acorn one, with which one was treated to a seemingly endless and repetitive "Searching". Here one is given full information as to the size of the program and the number of the block being downloaded, and at the end of the downloading one simply presses the spacebar to store on disc or tape. The ease, compared with the Acorn version, has to be seen to be believed.

The only criticism, and it may be minor, is that the 1 MHz port was not used instead of the user port; this would have left the latter free for other add-ons such as a Mouse.

The Morley Teletext Adaptor is perhaps not as robust as the Acorn one, but it is cheaper and very much easier to use. Using it over a number of months in different schools, it has proved utterly reliable, and may confidently be recommended.

EXCERPT FROM TIMES EDUCATIONAL SUPPLEMENT SEPTEMBER 1986

William Benjamin

What is Videotext? The term generally refers to the electronic information transmitted either through cable like BT's *Prestel* service, or over the air by the BBC's *Ceefax* or ITV's *Oracle* service. Information transmitted via cable is termed Viewdata, via airwaves it is Teletext.

Videotext systems have an important role to play in the development of information skills. Their implementation can lead to work on the nature of information, its classification, its sources and its bias. It can also promote retrieval skills, planning of logical search and use of indexes, and encourage advanced reading skills like skimming and scanning. Reluctant writers gain tremendously from videotext. The screen presentation and graphics can give them previously unfound confidence in themselves, especially with the discovery that people enjoy reading their pages.

It could be impractical to use Prestel in small primary schools as it ties up the school's one and only telephone line. Teletext systems are worth exploring in this context as the information and telesoftware is free and can be accessed at any time without interruption.

Teletext

My school decided to take the teletext plunge and we happily installed a new aerial outlet and a signal-booster (we couldn't receive BBC1 satisfactorily). We chose the Morley Electronics teletext adapter over the Acorn product as we liked the fail-safe tuning facility and the simplicity of operation. A major problem with these adapters is the difficulty in maintaining the tuning. Tuning on the Acorn unit is performed with little wheels and it proved difficult to tune accurately — and little fingers love to twiddle little wheels! The Morley unit employs a far more sophisticated tuning arrangement that cannot be upset because the tuning data is kept on disc. We liked the clear menu from which all operations are carried out : changing channels, printing out a page, saving a page, downloading telesoftware, holding a page (to prevent it being updated), and REVEALing hidden text. Another important attribute of the Morley teletext adapter is that its opened ended design ensures that it will be able to receive 8-bit data transmissions from over 625 lines of the TV signal! The Morley unit has been designed to ensure that its operation is simple and smooth. It is the ideal teletext adapter for school use.

The unit performed so well and proved so easy to learn to use, it wasn't long before the teachers were falling over the children in the rush to utilise it! The unit is used not only for looking at Ceefax/Oracle pages (interesting though they are), but for saving screens and dumping them to the printer for wall-displays and to put in children's exercise books (we use Userdump from Acorn User as a dump routine but any Mode 7 machine code dump routine would do). Naturally, it wasn't long before several children wanted to try their hand at producing their own 'Ceefax' pages. At first I let them edit and 'play' with the

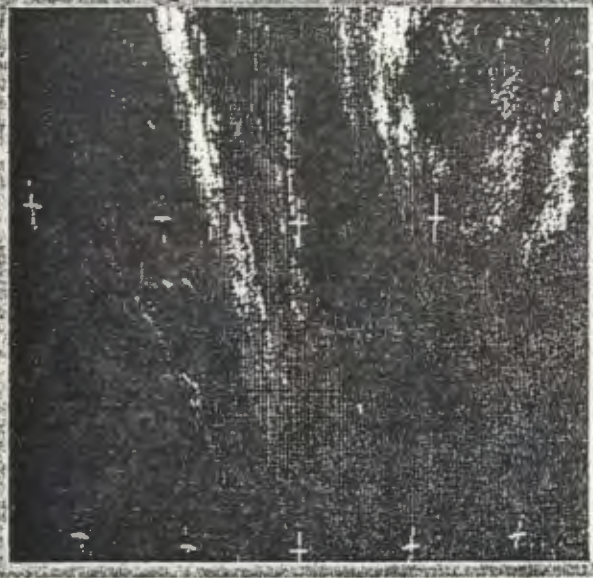Figures 1-6 were decoded from data from the *weather satellite, Meteosat II, at Clifton College.*

Figure 1 A large cloud formation *West of Africa. The lighter the colour of the cloud, the thicker it is.*

screens we had saved to disc. They needed a lot of help in understanding the control codes and how they work. Having the already prepared teletext screens was a great asset here. Soon they were downloading screens like veterans and editing them off line.

saved to the data disc. The children thought this was marvellous. Soon they were able to delete a whole frame, leave the part they wanted and create their own graphics and text round it. We decided to produce a school magazine — Desfax 7 proved to be the ideal tool for the job. Its editor, once learnt is excellent and it has super on-screen, editing facilities. We can 'cut and paste' parts of old pages to create new ones and areas of the screen can be copied onto other parts of the screen which can be saved and reused with other frames. The four character fonts provided were very popular with the children. We set up a carousel file which also proved very easy with carousel option (it makes only one screen access for every 16 frames. It should be possible to animate screens at a rate of 16 a second!). The carousel was displayed in the dining hall during lunch times.

Any school purchasing a teletext unit should seriously consider the Morley adapter and Desfax 7 combination. It has proven enormously successful in my junior school. Being content-free, its applications across the curriculum are enormous.

Computer communication in the classroom and beyond

To facilitate editing and organising the burgeoning disc of frames that were being saved and edited, we purchased *Desfax 7* from M/B Software. This software has been designed to interface with the Morley teletext adapter directly. For example, frames can be obtained from the adapter and immediately edited and

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H A R D W A R E

OUTSIDE BROADCAST

Trevor Buck tunes himself into the Morley Teletext Adaptor and downloads his review

The Morley Teletext Adaptor can capture teletext information and software broadcast by the BBC (Ceefax) and ITV (Oracle) through a standard television aerial and display them on an ordinary TV set. The advantage over teletext by phone is that, once you've bought the hardware, the software comes free and there is no subscription charge.

Acorn already has a device to do just this which I have used for some time, but it costs £149 and is unable to take advantage of changes being made to teletext broadcasting – which the Morley device can. The newer adaptor comes with ROM chip software and manual just like the Acorn one, but goes about its task in a very different way.

The instructions to install the ROM are clear and I had the whole thing put back together and all plugged-in in under three minutes. Unlike the Acorn system, which uses the 1MHz bus and creates an alternative filing system, the Morley unit plugs into the user port and works from within the current filing system.

Now if, like me, you try out new goodies by giving what seem to be logical commands, and seeing how far you can get before you have to resort to the manual, this adaptor is for you.

I was unsure how well I would get on at first, as there is a message to remind you that the system has not been fed with its required TV channel data on power up. Not to be outdone I went ahead with *TTEXT and was rewarded with the working page tuned in to BBC1 Ceefax. The people at Morley have built-in a set of default channel data while the unit is under development, and this just happened to be the same as those channels for my area.

In order to tune the unit in all you have to do is type *TUNE and a Basic program is run to tune the unit to the channels. Full instructions on how to use it for fine tuning are given in the manual, and it took me less than three minutes to find all four channels. All the controls are on the keyboard.

The channel tuning data is saved onto disc in a file called 'channel' and reloaded by the command *CHANNEL. Every time you turn on you can run a !BOOT file to do *CHANNEL and *TTEXT for you.

The unit tunes into the default page of 100 on BBC1, and the teletext page is displayed by pressing Tab. Escape takes you back to the
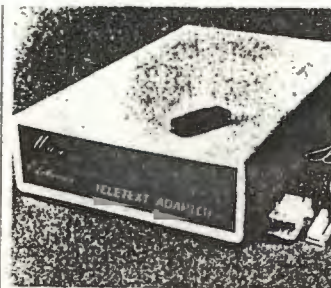
Download software for free

working page. The on-screen menu gives you the options to save a screen to disc, catalogue software, download software, toggle reveal on/off, toggle hold on/off, and select a new channel (1-4). They are entered by a single key press, with no need to press Return or select an option via the function keys.

Like a TV set with teletext, all you do is key in the three digit number of the page you want and wait for it to be broadcast. You can select a new page from either the working page or the current page displayed.

Using the 'N' key prompts for the channel in the bottom right box on the working page, and you must type in a number from 1 to 4. The 'page header' information changes to show that you are now on the desired channel.

Reveal and Hold have their current status displayed on the working pages, and when used with a displayed page their on/off status is flashed up at the bottom of the screen.

To save a screen to disc is simple – just select the page number you want and press 'S'. The system prompts for a filename and then saves the screen to disc. These screen images can then be *LOADED as and when required.

However, for most people the main attraction will be accessing the software. Pressing the 'C' key puts the unit into display mode for BBC1 page 701, where *CAT is found (a list of the current software available).

The Download command also accesses page 701 and includes an extra line prompting for the page number of the program you want to download. Each page is stored so as to form a complete program, and you are given a choice of saving this to disc or running it in Basic.

The unit comes with full error checking, and when errors occur it will try to correct these on

the next transmission of the block. At the time of writing the blocks change every 20 seconds or so, and the unit will keep going until it has downloaded the software or you give up.

One of its nice touches is that, instead of just 'Searching . . .' over and over again, it gives the name of the program, how many blocks long it is and the number of each block as it is downloaded. This is initially in white and changes to green when complete. If there are any errors they are indicated and corrected on subsequent passes through the blocks.

The majority of the commands in the ROM are those used to access teletext from within a Basic program. The command set has been designed so that all transmitted software that uses 'live' teletext data can be used with the Morley unit. This has had to be done as the BBC transmits programs designed for use with the Acorn unit only, so that some 'dummy' commands are included to get round the 'Bad command' error. The one thing that will have to be taken out of some programs is the test for the value of PAGE, as this is used to check that the Acorn adaptor is receiving teletext.

When downloading software there is no real difference between the Morley or Acorn adaptors in the time it takes to go from block to block, as this is governed by the speed at which the broadcaster sends out the sequence of sub-pages that make up each file.

The time saving is that the Morley adaptor saves the files to disc at the press of the space bar, and ASCII files can be downloaded just as readily as tokenised ones. The Acorn unit leaves the program in memory, and a change of filing system is required before saving can take place (sometimes after first having to find out information from other Ceefax pages).

Where the Morley unit will succeed over the Acorn one is that it can receive 8-bit data transmissions, and not just on the existing, limited number of data lines but over all 625 lines of the TV signal. Thus, if cable TV takes off, we could see a whole channel being used for data – and pages being accessed almost as quickly as the number is entered.

In terms of price, performance, future expansion possiblities and those little touches that show thought for the end user, I would recommend the Morley unit.