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Editorial

Have you noticed how many magazines there are now for what must be considered as the 'standard' computer of today - the IBM compatible PC. At my local newsagents there was a complete shelf full of similar publications, do you read any? what is your favourite? do you use an IBM type machine as well as the Einstein? We would like to compile a list of the various magazines and their good/bad points - so send us your views. Also we would like to see some articles on the IBM compatible, I am sure some of you use both, so let us know what are the differences between Albert and the IBM, has anyone built an IBM machine? is it easy? is it worth doing?

We would like some short programs to print for Albert, less than one page preferably, here is one idea - a program to set the disc drive configuration under System 5, similar to Config in System 80. We do need your input for AMN - anything to do with electronics or computers is more than welcome!!

Competition

Here is a nice easy one and a chance to win a ten pound voucher for your efforts. (You can also win a tanner for sending in a competition!!)

You have only your Master disc and a blank formatted disc with your single drive Einstein. You want to copy XBAS.COM from your master disc to the blank disc - how many different ways are there to do this? The winner will be the hostess with the mostess! and a consolation prize for the most original!!

SHARWARD SERVICES



Upland Centre

2 Upland Road, Ipswich, Suffolk IP4 5BT

Tel 0473 272002 Fax 0473 272008

VISA

Items marked with an asterisk are used but working in good condition. Please ring before ordering as some are one offs. All prices include VAT and carriage.

TM01 colour monitor £78*

TM80 mono, (green), monitor £33*

3" internal disk drive upgrade kit £28*

CP/M the software bus, (book) £4*

Metal external disk drive cases, space for PSU at rear. 3.5", (cream) or 5.25" (grey) ... £10

One only, Citizen 124D, 24 pin printer, brand new with 2 year warranty, 144 cps in draft, 44 cps in letter quality, three built in fonts, tractor and friction feed, rear and bottom paper feed, IBM/Epson graphics, complete with 500 sheets of paper, 100 address labels and either an Einstein or IBM cable. Inclusive of VAT and Carriage £170!!!

Smith Corona dot matrix printer, no manual, works with Einstein OK, tractor & friction, 1 month warranty, 500 sheets of paper and printer lead - £65*

Tandy DMP dot matrix printer, tractor & fiction feed, with manual, 1 month warranty, 500 sheets of paper plus printer cable - £70*

IBM Bits and Bobs

Bare 3.5" disk drives; (Teac 1 year warranty)

720k £35 1.44M £45

5.25" metal chassis for above, inc power/data adaptor ... £8

5.25" plastic chassis with power adaptor £4.50

GEM 1st Word+, Gem 3, Gem Paint, 1st Word WP £29.95

16k Parallel printer buffer cards, LPT1 or LPT2 ... £9.95

High quality mouse mats, (6mm thick) ... £2.50

DRALOT REVIEW

Ron Stephenson looks at Albert and plotter!

DRALOT is a software program to enable the colour graphics TANDY CGP-115 plotter to produce four colour graphics from the Einstein.

As this is a review it seemed a good idea to read the manual first. The copy I received was unfortunately only just readable, mainly due to poor photocopying. It is a very complete document but therein lays the difficulty; it takes a lot of reading to find the relevant information. It appears to have been written round the FACIT plotter which entails wading through all that, to find the data for the TANDY plotter. However, once the relevant parts have been located, the information is very detailed and ones hand is held through the difficult bits.

The software comes on a file only disc. The first job is to COPY the files across onto a formatted disc in order to provide the DOS. Then a bug in the Xtal DOS has to be fixed by running FIXDOS.COM. Its all quite painless (unless like me your 2nd drive decides to go on the blink).

It was here I hit the first snag. I have a Brothers M-1009 NLQ printer sitting on the parallel port and the TANDY CGP uses the serial port. My main use is Tasword which can call either port as required and thus avoid cable swapping. As it is at present, Dralot uses the parallel port only, thus cable swapping or switching at the Centronics port would be required.

I auto-booted the disc so starting is easy. A menu opens the action and a sample picture can be put on the VDU. The normal Einstein limitations still apply - eight horizontal pixels all the same colour.

Now to get a print out. First the plotter commands have to be configured for a TANDY. This is where it gets interesting. They come firmly set (and I mean firmly) for the FACIT plotter. Turn to the first mention of an alternative plotter on page No 11 and follow instructions exactly. The general background still pertains to the FACIT but for any one configuring any other plotter, the information will be helpful.

The TANDY default values will now be held in the file DSETUPS.SCE and it is worth listing this from DOS via DISP and check it is exactly correct. I lost a lot of time and cool here and it is vital (as the program stands) to copy this file to another disc. You will see why later. Another disc is needed anyway for your creations.

If all is well you can now call DSTART and plot out your first little green one puff train. You can add more puffs later. Which brings us nicely on to DDRAW itself.

DDRAW appears to be loosely based on PICPEN but has enough extra facilities to make it a viable drawing tool. O.K it is a little slow (the speed control did not work on my set up) and the key response is erratic in response time (is this due to Alberts age or a key polling problem) but having said that, it is very useable in a way that PICPEN is not. The single pixel flickers away in a box so that accurate positioning is possible.

An analogue joystick or the keyboard can be called up, travel is: - up, down, left, right, then the four angles (45 degrees) between them. Other angles are possible using D x,y which draws a line from present position to co-ordinates x,y. This is a very useful facility for perspective guide lines, although they are then tedious to delete.

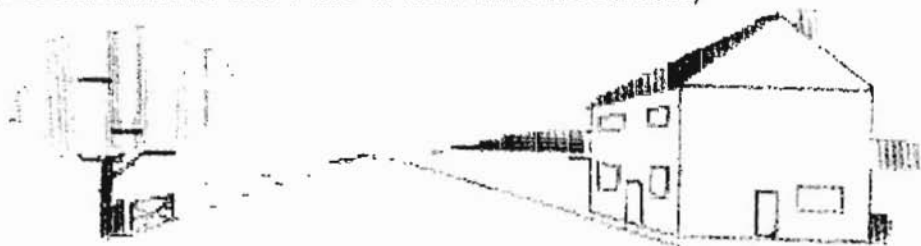
At all times operating data is displayed at the bottom of the screen i.e. Pen on/off, X,Y co-ordinates, Pen speed, colour and Rubout status. It has a novel feature in that it can be moved to the top of the screen if it gets in the way of the picture.

Alberts full colour range is available on the screen but of course you have to remember the limit of four colour pens on the TANDY plotter. Having doodled a masterpiece or added a puff to the train, you can save the result on disc which is easy, and then you can call up DDUMP and watch your creation appearing on the plotter. There are other goodies which have not been explored, such as different plotting scales, starting positions and the effects of inversions and rotations.

Now for the niggles, and a warning. Firstly, when in Main Menu do not be tempted to press *** No 5 Set to standard default values *** as this wipes the TANDY values and reinserts the FACIT ones. So unless you have saved them on another disc as mentioned above the whole lot will have to be done again. Therefore Item 5 of the Main Menu should either be removed or the TANDY data made safe from inadvertent loss. Then a better photocopied Manual. Finally and I think the most important snag is the erratic response of P the pen on/off key. The other keys have the same effect but as it is the P on/off which is used most and although I realize the beep is meant to assist in giving a feed back, I found I had to keep glancing at the screen prompt to see if was safe to proceed. Do you look at your car gearlever to see what position it is in?

I have contacted Brian Theasby and listed the above points along with one or two other minor errors and he has indicated that he is interested in producing a modified version as soon as his present commitments (exams) allow. Depending on the final result I think it would make a valuable addition to Alberts repertoire, although I wonder how many other misguided persons own an Einstein and a Tandy CGP-115 plotter??!!

(Drawlot is available for £15 + £1 P+P from Sharward Services)



CHOOSE YOUR FIRST LASER PRINTER WITH A SHARP EYE TO YOUR FUTURE NEEDS

by Milton Finesilver

OKAY, so you've made the monumental decision — you're going to add a laser printer to your computer set-up.

So what is the first step? Believe it or not, before looking at brand names, models or fonts, or choosing between a true laser, LCD or liquid crystal shutter device, you want to examine your insurance.

Whether you have a home contents or business/office policy, you'll need to take care that it offers sufficient cover for a laser. And that's even if you've never bothered to take out policies for your present system.

Next, check your budget. You need to allow enough for the laser, your first complete replacement drum assembly or similar, plus consumables such as toner and paper.

The standard laser printer takes A4 cut sheets. What's your existing paper stock? Is it the flimsy sort that typists use for carbon copies? The fanfold type with sprocket holes?

Perhaps you use thermal fax paper on a roll for a printer such as the OKImate 20 for the ICL One Per Desk?

For each of these examples, you'll need to fork out for new paper.

If you plan to use laser copies for artwork for, say, a youth club magazine, or because you work in a printing firm, there are some reasonable brands of laser paper which offer a smooth finish similar to the

resin-coated papers used for photographic processes.

Next on the agenda is to allow cash for your first year's servicing and user support.

Sure, you can buy the machine alone from a box shifter and worry about the rest later. But one specialist supplier, Anage Printing Systems, of Slough, Berkshire, advises against going down that route.

Paul Lawrence, the company's experienced managing director, points out: "You may find your existing software, perhaps a version of Word Perfect, for example, lacks a printer driver to get the best out of your new laser.

"A box shifter would be unable to provide help with installing the printer."

Some of the companies which quote the lowest prices could even be unable to supply a proper power cable!

"But specialists pride themselves on offering gold-plated user support, either in person, over the phone, down a modem, or through the post," adds Mr Lawrence.

So in this example, the right printer driver could be copied on to a 3.5in floppy for you or winging its way over your modem in a trice.

The Anage team have been based in their current premises for about three years. Mr Lawrence says he and his sales staff are very happy with what

Slough has to offer. In the vicinity are the headquarters of top computer industry brands such as OKI, GoldStar and Ventura.

It offers easy access to the M4 corridor, with customers as far as Swindon and the whole of Wiltshire, the Cardiff area and throughout Wales.

The bulk of Anage's clients are of course placed within the M25 orbit, but many satisfied customers are scattered around the rest of the UK.

Chances are, your county, district or borough council uses lasers supplied by specialists such as Anage.

If so, it's odds-on that many of the high-performance machines in those sites are made by a Japanese company known as Kyocera.

The BBC is reputed to use lasers all over Broadcasting House and Television Centre in London. For all I know, the pundits' scripts for this year's general election extravaganza could have been printed out first on Kyocera machines.

Certainly, TV coverage of the June 1987 poll was dominated by computers. Both the Beeb and ITN installed scores of Dec Vax minis and Quantel Paintbox gear to bring the forecasts, results and graphics to the tube. And a firm from Slough, Autofile, developed a Fortran program for ITN to analyse the election statistics for viewers.

The data was fed straight into Oracle's teletext onscreen service and into a battery of laser printers for the broadcasters.

In those days, Peter Sissons was at ITN. He said later: "The whole set-up had three back-ups and our news team

was drilled in using the equipment which the technical staff had been preparing for the previous two years.

"Each constituency's result took only two seconds to be computed."

No doubt the 1992 process would be even more frantic. While Kyocera's lasers do not have mainframe or mini links built in, the company can call on third-party makers of proven interfaces for connecting to Dec, Wang or coax and twinax environments.

Another intriguing user of lasers is Comag, the national periodical distributor.

Part of its activities include importing American computer and fashion magazines as well as Marvel comic books. Most of the covers have bar code boxes, usually in the lower left-hand corners.

But as luck will have it, the US formula for bar codes is totally different to the UK design. If the checkout staff of a big newsagent store such as WH Smith ran their bar code wand over a US bar code, chaos would result in the till system.

We can't have that, can we? That's why importers such as Comag and Seymour have to slap new bar code labels on the magazines. There are firms which specialise in outputting these labels from artwork generated by high-profile imagesetters such as the Scangraphic Dr Boger range.

But the Kyocera lasers can generate bar codes at a fraction of the cost and straight on to adhesive labels with no messing about. The 39 formats can be configured with commands from Kyocera's Prescribe page description

language. It may even be possible to export UPC codes back to the US!

There was also a trend some years ago to printing programs in magazines in bar code format. The Acorn BBC B machine had a head start in this area, with a simple light pen doing the work of a sophisticated bar code reader wand.

Elektor magazine ran articles on the theory behind the codes, and a book by Bruce Smith, *Introducing CPM on the BBC Micro Z80 Second Processor*, published by Collins, included a pair of encoded programs.

Any 8-bit micro, such as the Tatung Einstein, with a user port/interface and suitable interrupt-handling, should be able to cope with a bar code reader.

In this way, the Kyocera could be configured to print out confidential program routines for distribution by the Royal Mail. But you wouldn't need to be Alan Turing to decode them.

Prescribe is the powerhouse of the F-series lasers, driving the Motorola MC68000 or MC68020 series chip and the printer engine to give their very best facilities to the user on a plate.

In addition to the laser user guide for each machine — covering control panel, paper-loading, paper jams, maintenance and other rivetting topics — there's a programming guide common to all the F-series.

It details the printer codes for all seven text emulations: HP Laserjet Series II, Qume Sprint 11, Diablo 630, IBM Proprinter, NEC Spinwriter, Epson FX80 and LinePrinter.

Just for this data alone, it would

make an invaluable printers reference volume for non-Kyocera programmers.

In addition, sections are devoted to Prescribe commands, with brief but stunning example programs. You have full resource to creating detailed graphics even while in one of the daisywheel emulations.

If necessary, you can type Prescribe commands from the A: prompt while in MS-Dos and send them to the printer by pressing the printscreen key.

Presumably, the same effects can be achieved from CPM on an Amstrad PCW with ctrl-P or from Xtal-Dos on the Tatung Einstein with ctrl-A.

To open a Prescribe command sequence in an Ascii word processor file, such as with Kuma Wdpro or WordStar 4 CPM version (the package in use here), just type !R! This three-character sequence is unlikely to turn up in your normal prose so you can't activate the coding mode by mistake, and it doesn't involve tricky esc or ctrl keystroke combinations either.

Semi-colons separate the statements, and exit; completes the sequence, returning the printer to text mode. In this way, a pie chart or logo can be embedded within a three-column page of text set in 10pt Times Roman.

If one can find something to criticise in the Kyocera range, it's the lack of a screen driver to preview all the fascinating graphical effects.

This should be quite simple to set up, however — the kind of thing an enterprising user group could commission. For instance, Crystal Research's Xtal-Basic allows you to add extra commands and BBC Basic (Z80)

allows procedure—defining and assembler code subroutines.

With CPM Plus on the Amstrads (and for that matter CPM 2.2 on the BBC Z80 add-on), the GSX graphics modules allow designer-commands to be added to Mallard Basic.

Each output device in GSX needs a driver routine; you would have to tie the GSX screen commands to the Kyocera Prescribe codes.

Let's look at another aspect of the F-series: IC cards. These are smartcard-sized and hold up to 64kb of data. As such, they work out at half the price of similar cards for wallet-shape micros such as the Atari Portfolio (see AMN 1/6).

You can store fonts, graphics, scanned-in images, even signatures, on to the cards. As the larger Kyocera printers have twin slots, that's 128kb of instant data.

At switch-on, the machine reads the control panel for default settings (there are no dip switches, thankfully) and checks the card slots. Any fonts or other items, such as raster and vector graphics, are assigned call-up numbers for use by Prescribe.

This is always much faster than downloading softfonts from disk on the PC. If you have a CPM machine, it's the only option for extra fonts.

You can buy from Kyocera an IC Card Reader/Writer Board with the appropriate software. The half-height and half-length board fits into a spare slot on a PC, and the blank IC cards fit into a slot on the end, ready to be blown with your data, on a write once/read many times basis.

This board may not be an economic buy for most users; and a no-go for people such as me who don't own an IBM. Again, what is needed is an enterprising user group to download to IC cards the various public domain fonts, as well as new designs and Prescribe graphic routines, for users.

Kyocera presently has one Postscript-compatible printer: the P-2002. This uses KPD L page description language to interpret Postscript-compatible commands sent from a PC or Mac, with Appletalk being an optional interface.

Sadly, it has only the Diablo 630 and Laserjet II emulations and does not have the Prescribe or IC card facilities of the rest of the Kyocera printers. Unless you have Postscript software such as Ventura, Pagemaker or QuarkXpress, this printer may not be such a good buy. Although it would be faster than a genuine Hewlett-Packard with an Adobe Postscript cartridge.

In contrast, another company, OKI, offers the PagePrinter 840.

It provides all 35 Postscript fonts across 10 families, plus seven variants for use with standard word-processing software. Of course, there's a trade-off: this model uses light-emitting diode technology.

Doesn't offer the same glamour as a real McCoy laser, does it?

But back to Kyocera. The company was founded 30 years ago in Japan as Kyoto Ceramics. It made materials for semiconductors. Nowadays, these chips dominate many fields: from micros to optics to surgery.

In the early-1980s, it made those

reliable battery-powered laptop micros marketed in the UK by the likes of NEC, Tandy and Olivetti.

Kyocera is also the name on a range of well-liked PC hardcards.

But its laser printers came to the UK via one of the key exhibitions such as CeBit or Comdex in Germany.

That's where an executive of Mekom Computer Products saw the F-1010 and F-2010 machines, and liked them so much he brought them to the UK as the sole distributor.

More recently, Kyocera has set up its own UK base. Meanwhile, some staffers from Mekom have joined the sales and servicing force at Anage Printing Systems, ensuring continuity of expertise.

Even so, Paul Lawrence at Anage points out that the supplier is not tied to any particular manufacturer, and will always suggest the right printer to fit a client's precise needs. Beware of the type of companies which try to fit your application to the unsold kit still gathering dust in their back room.

PRICES: These are manufacturers' suggested retail prices. Vat and carriage would be extra. Some suppliers offer keen discounts. Action Computer Supplies quotes discounts of between £290 and £1,600 on the range it sells. Other firms offer free consumables or maintenance deals

Kyocera F-800T £1,179, F-820 £1,749, F-1200S £2,180, F-2200S £2,920, F-1800 £2,920, F-3300 £3,650, F-5000 £5,350, P-2002 £3,580

IC card reader/writer board
ICR W-100 £336, IC cards £36

Font/Logo Master editing
program FE/1 for PCs £256

Ram upgrades: 1mb £245,
2mb £450, 4mb £850

Kyocera scanner KS-800 £1,430

OKI page printers: 400 £899, 840
single bin £2,000 or twin bin £2,244

Brother HL-8PS £2,295

Ram upgrade: 2mb £499

Example consumables and page yields
(depending on model): Kyocera toner

£25 - £40 (3,000 - 5,000 pages),
drum £145 - £275 (10,000 -

20,000 pp), developer £99 - £165
(20,000 - 50,000 pp), fuser £196 -
£269 (80,000 - 100,000 pp)

OKI toner £18 (2,500 pp), EP
cartridge £141 (12,000 pp)

Brother HL-8PSEPS cartridge
£58.95 (4,000 pp)

Contacts

Anage Printing Systems, 128 Salt
Hill Way, Slough, Berkshire

SL1 3TX Tel (0753) 553000

Action Computer Supplies,
Alpertown House, Bridgewater Road,

Wembley, Middlesex HA0 1EH

Tel 081-900 2566

Kyocera Electronics (UK) Ltd, 8

Beacontree Plaza, Gillette Way,

Reading RG2 0BP Tel (0734) 311500

OKI Systems (UK) Ltd, 550 Dundee

Road, Slough Trading Estate,

Slough, Berkshire SL1 4LE

Tel (0753) 31292

Brother Business Machines, Jones

+ Brother, Shepley Street,

Audenshaw, Greater Manchester

M34 5JD, Tel 061-330 6531

FONT DATA: KYOCERA, OKI & BROTHER PRINTERS

Kyocera F-series

resident fonts

pt	pitch	family	variants
14	ps	Helvetica	bold, bold
12	"	"	itals
10	"	"	"
8	"	"	med, med
6	"	"	itals, bold,
10	"	Times	bold itals
8	"	"	"
12	12	Letter Gothic	"
12	12	Courier	"
10	12	Prestige Elite	"
7	16	"	"
9	16	Line Printer	"
6	21	"	"

Portrait: all variants available

Landscape: all variants available in
Letter Gothic, Courier,
10pt Times, 10pt Prestige
Elite, 9pt Line Printer
Remaining families: no
med itals or bold itals

Total: 79 variants

Three dynamic fonts can be defined
by Prescribe commands for headings in
sizes up to 72pt. Width, slant &
rotation effects possible. Extra PC
software, Font/Logo Master, available
to re-edit dynamic font shapes
on screen to create exclusive designs

Kyocera P-series

Postscript-compatible fonts for PC or
Macintosh dtp software; 35 variants
across 10 families: Swiss (similar to
Helvetica), Dutch (similar to Times),
Century Schoolbook, Courier, Symbol;

plus ITC (International Typeface
Corporation) fonts: Avant Garde,
Bookman, Zapf Chancery, Zapf Dingbats.
Palatino may be missing. But a hitherto-
non-existent face, ITC Zapf Calligra-
phic, is listed in Kyocera's spec sheet

OKI Page Printer 400

resident fonts

14pt	Swiss (Helvetica)	2 variants
10pt	Dutch (Times)	9 "
8pt	"	4 "
12pt	Courier	7 "
8.5pt	Line Printer	3 "

Optional fontcards for HP emulation:
Dutch, Letter Gothic, Legal Courier,
Prestige Elite, HP S1, HP S2

OKI Page Printer 840

resident fonts

35 scalable Adobe variants in 10
families plus 14pt Swiss, 12pt, 10pt,
8pt Dutch, 12pt, 10pt Courier, 8.5pt
Line Printer

Optional font cards for HP emulation:
Dutch, Letter Gothic, Legal Courier,
Prestige Elite

Brother HL-8PS

resident fonts

BR-Script uses familiar scalable Post-
script-style set of 35 variants across
10 families, designated with codes such
as BR-01T and BR-07P. Real fonts'
copyright owners — such as Linotype,
ITC and Kingsley-ATF — are listed in
Brother publicity. One font, 16.6 ptch
Letter Gothic, included for HP emulation

TC01 TO SCART

Andrew Fay connects Albert to his TV and video.

SCART sockets can be found on the back of most new video recorders and television sets, and even some of the games consoles. The scart socket is a 21 pin standard that provides RGB video, Composite video, Stereo Sound, and some control and data signals.

I deliberately bought a television and video recorder with Scart sockets with the thought that I might be able to utilise these with my Einstein. Another benefit of using scart sockets to connect your TV and video together is that a better picture may result due to less interference and on my set up the video changes the television over to scart input whenever I put it into play and back to the tuner when it is stopped.

As I use the TV for the display for my TC01, I thought it would be handy to feed the RGB signals in directly, via the scart, together with the composite video from the 80 column card which I previously had to feed in to a phono socket at the front of the TV. Now come the complications; firstly I already use scart for my video; secondly, the sync pulses for RGB are input via the composite video pin; and lastly the switching needs 2v and 12v for selecting the input source. (See the Maplin catalogue page 200).

The answer was going towards some form of changeover switch and as I needed power to supply the control I might as well use the 8 bit port on Albert as the source and the switching signal. The presence of power was enough to indicate switching from the video, so only one other signal was needed to select between 80 columns and RGB. It would be possible to add another transistor, controlled by D6, which switched the other relay and the circuit would still operate as now but with the option of switching back to TV/Video while the computer is on. Perhaps you could go back to watching 'Allo'Allo until Albert has finished sorting your financial situation at which time it presents the result.

After searching the Maplin catalogue for a while, I came across a circuit for a 5v/15v DC/DC converter, (page 451), which is ideal for generating the 12v signal to the television. The specification for the fast video blanking pin, which selects RGB, was about 2v with an impedance of 75 ohms. From 5v, this indicated a 120 ohm

series resistor which I then limited with three diodes. This was too much current to ground via a transistor and as I required it to re-enable the video connection when the TC01 was off, I decided that relay contacts were the simplest answer.

Thus I needed one changeover for the 2v signal, one for the 12v, one for video/computer and one more for selecting RGB (Sync) / Composite from the computer. I also needed a 12v generator and a buffer for the relay. After deciding to use the 8 bit user port for the control signal, I chose D7 as the control bit so as to still be able to use the mouse for which I added a 9 pin chassis plug, (the mouse uses D0 - D5 +5v & GND).

The drive for the switched relay was simply a transistor buffer, but I wanted it to default to ON as the TC01 powers up on RGB and the 8 bit user port defaults to input, it would thus pull high. As I wanted to ensure that it defaulted to ON and interfered with the port as little as possible I chose to use a 8FY50, this has good gain at reasonable drain currents and pulled the base high with an 18k ohm resistor. The relays used were supplied from Farnell, type - Hamlin HE822C5033 DPCO, these have two changeover contacts and are physically quite small.

The most difficult part was deciding how to put the project together. I had a number of signals to come from the video and many more to go to the TV, plus four screened leads of the RGB input, single screened lead from the 80 column display and 16 way ribbon from the user port. As I already had a scart to scart lead, (TV to video), and a spare scart plug it seemed logical to use these, so I decided to mount the scart plug directly to the project box and plug this into the television input, this had the benefit of holding the completed unit in place, a scart socket was then added to the box to take the video input. The computer video and control signals were then fed in via flying leads and ribbon cable.

A small plastic project box was used, cutting holes to take the scart plug & socket which were held using epoxy resin glue. A small piece of strip board was used to mount the components, this being finally epoxyed, (good word?) in after final testing.

I laid out the relays on the strip board, cut to fit the box, with enough space to fit the transistor and terminal pins around them. The largest component other than the relays was the 1mH choke and I arranged this to give me 12v output at a suitable place to feed the relay. This forced the 8 pin DIL into one corner but still left room for the feedback resistors.

The only part I had a problem with was the three diodes on the 2v line as there was not enough space or spare tracks to fit them on. In the end I soldered one at either end by one lead and used the third to join them up. If I was to build this again I would just use a 2.7v zener, as this pin will accept levels upto 3v. In the 12v generator I still generate 15v and drop it to 12v with a 1k ohm resistor. The circuit could have been adapted to produce an acceptable level directly by changing the 180k resistor to between 130 and 150k, but I decided to use the 1k resistor as some form of protection for the scart input.

The initial trial looked hopeful with the TV changing to RGB properly and displaying the Einstein opening screen, but I could get no joy from the 80 column output and decided that I was not setting the user port correctly. I also had two channels of sound on the TV when the video was switched on, this was due to swapped in/out on the video socket. This was because I had originally planned a direct link and thus had to swap, but I then used the scart to scart lead which already had a swap which I had swapped back!!! The other problem was just a dry joint on the 80 column connector.

After fixing these minor irritations the circuit works fine, below is the code used which switches between 40, (RGB), and 80 column, (Composite). This could be patched into XBAS or any application, at present I have them as seperate programs, 800n and 800FF. The mouse functions OK and I have had no apparent problems.

```

800N      3E FF      LD A,&FF      ;Bit mode.
          D3 33      OUT (&33),A    ;Control port
          3E 7F      LD A,&7F      ;D7 out (rest in)
          D3 33      OUT (&33),A
          3E 07      LD A,&07      ;No interrupt
          D3 33      OUT (&33),A
          ;
          3E 10      LD A,&10      ;^P (Control + P)
          CF 9E      MCAL OUTC     ;Send to screen
          3E 7F      LD A,&7F      ;D7 set low
          D3 32      OUT (&32),A   ;data port
          C 9        RET          ;Return

```


OPERATION

The two pins; Blanking (16) and function switching (8) operate as source selection as in the following table:

P 8	P 16	Source
0v	0	Internal Tuner
0v	2v	RGB Input
12v	0	Composite Input
12v	2v	RGB Input

(With thanks to Maplin)

My circuit utilises the last two, the 12v is used to change the television from "Off Air" signals to the signal supplied by the computer and the 2v signal to select RGB or Composite. When the computer is switched on, both relays operate and the three signals between video recorder and television, (Blanking, Source switching and Composite video), are switched over. When switched the two source selection pins are held at 12v and 2v so that RGB is selected. The other two contacts handle the video video line and act as a three way switch; when both relays are on then the sync signal from the RGB output is routed to the television and when the second relay is de-energised the 2v signal is removed from the television and the 80 column video signal is presented to the television. The fast switching (p16) is changing over to that of the video recorder when the computer requests 80 column output, which could cause some problems with some forms of input, but as these would be outputting RGB then the whole relay contact arrangement would need re-designing. This signal is thus not needed by the video and could be held to 0v, but I did it this way so as to have the connection from the video as it was before, when the computer is off.

Contacts; Maplin Electronics, Tel; 0702 554161
Farnell Components Tel; 0532 636311

NOTES; Only a thought but if you are thinking of replacing your TV or video, a unit with Scart I/O would be worth having.

SEMI - DIY 3.5" EXTERNAL DRIVE

If you are competent with a soldering iron and don't mind opening up Albert here is a little project that will get you a rather smart 3.5" external 800k disc drive for just £50! (plus £3 postage)

Why such good value? well we have recently acquired some rather smart metal 3.5" cases, that do have space for a power supply at the rear, but with a little lateral thinking we realised that we could make do by using the power out of Albert in a really neat way. (If you are worried about overloading the Einsteins power supply, then don't be because only one drive can be on at any one time and the 3.5" drives use much less power than the 3" variety). Also the cost is reduced by you doing the work of putting the drive and power plugs together.

The complete set of parts is;

- a) Two piece metal case
- b) Brand new Teac 3.5" 80 track double sided disc drive
- c) Power splitter cable
- d) Two power plugs
- e) Ribbon cable for the data and power

Now the really clever bit is in using the data cable to also supply the power. If you refer to the back of the introduction manual, page 222, you will see that pins 1 & 2 are not used by the disc interface and we can make use of this fact to supply the drive with the 5v and ground that it needs. (12v is used by the 3" drives but not needed on the 3.5"). So in making up the data cable we remove the connections to pins 1 & 2 at each end and extend the wires on these outputs to provide the power. This also has the added effect of giving a strain relief to the cable and keeping things very neat, all that is required is to feed the power leads into Albert, make up the plug and attach to the power splitter. The power splitter is simply one plug with two sockets and this is used to get the power from inside the Einstein to the new drive. Just unplug the power lead from the 3" drive and use the splitter to give an extra output. Make up the two power plugs- attach to drive and voila, one working 800k 3.5" drive at just over the cost of a bare unit! Comes with complete instructions.

Available from Sharward Services, Upland Centre, 2 Upland Road, Ipswich, IP4 5BT.

Post Bag

For Sale; Spectrum Emulator + book 'Beyond the Spectrum Emulator' - £30. 80 column card - £60. I also have a Sirius system, twin 5.25" floppy drives plus green screen monitor. All working with system disc + WP, MSDOS but not IBM compatible, £50+ P&P. Also has anyone got a boot disc for an Apricot XEN 20? 3.5" format, I was given the computer with a crashed hard disc but no floppies - anyone help? P.S. I sent in the competition featured in EM 3/2.

M. J. Pyman, 4 Lancaster Road, Wimbledon Village, London, SW19 5DD.

For Sale; Twin drive Einstein with 80 column card, 40/80 switch, Mono monitor, WS2000 modem plus cable, Manuals, Wordstar,

BBCBASIC etc., lots of PD discs and some games - £270.

J. Price-Stephens, 17 Thistle Court, Ty Canol, Cwmbran, Gwent, NP44 6JD.

Tel; 0454 624123 (Day)

0633 875569 (Evening)

Dear Ed, Re Soundex, (last issue), the codes most likely use is to provide security for main frame computers with many outlets. Thus giving only authorised personnel with codes acces to the machine.

Having typed in the listing and run it I got a syntax error line 18, my typing was correct. I deleted line 18 and it worked O.K. Can you explain the reason for this. Also will the DOS 2.05 and XBAS 5.02 have any effect when typed in on the earlier versions of Dos and XBAS? as I have found that they do not always work.

R. E. Treadwell, 9 Trevallack View, St. Kerne, helston, Cornwall, TR12 6RB.

ED .. We can't find anything wrong with the syntax of line 18, it works O.K. The only problems we have experienced between DOS 1 and XBAS 4 as compared to DOS 2 and XBAS 5 is with very long programs as XBAS 5 takes up more memory, If you are having problems and suspect the DOS or XBAS version, re-boot with the 'other' set and re-try your program. There will of course be a problem if the program is written with XBAS 5 and uses some of the additional commands such as REPEAT / WHILE etc. that are not available with XBAS 4, then, some modification of the program will be required to run under XBAS 4.

John Luther has written back to AMN with some surprise at seeing Soundex in the last issue and here is the explanation of the program.

A letter from a Mr. Halliday of San Jose, CA. gives the results of his research into the origins of SOUNDEX in the Dec 1990 volume of 'Computers in Genealogy'

'It began with the need to index names in the USA censuses to cater for the wide variety of ethnic origins and spellings, done then with card indexes. Back in the 1930s a Charles Lawrence introduced the SOUNDEX project to allow names in the census records to be found more easily, particularly those from non-English speaking sources and those that had not been anglicised.

Examples of my name; LUTHER, LOTHER, LUTER, LITTER, LATHER, LITHER, LATOR = L360, but LUTNER = L356

Reference; Letter from Richard L Halliday, San Jose, CA, USA. in Computers in Genealogy. Computers in Genealogy is published quarterly by the Society of Genealogists, 14 Charterhouse Buildings, Goswell Road, London, EC1 7BA. Subscription rates are £6 per year to members of SoG or BCS and £7 to non-members.

ED .. As Mr. Treadwell was the only one to guess at the origin of soundex he receives a copy of the games disc Raider for his efforts in writing in.

Dear AMN, what program do you use to print the labels on the envelopes used to send out the magazine? **W. Wadl.**

ED .. We have to admit that the database is now on an IBM compatible PC, running DBASE 3, before this we used DBASE II on Albert. The main reason for using an IBM type PC is the hard drive capability, it really does dramatically speed things up. Anyone got a hard disc interface for the Einstein ??

Wanted; 80 column card and TM01 colour monitor.

W Wadl, 66 Kindersley Way, Abbots Langley, Herts, WD5 0DQ.
Tel; 0923 265704.

For Sale; Atari 520ST, 1Mb 3.5" drive fitted, around 80 3.5" discs with software - games, utilities, etc. Mouse, joystick and some books. £190.
Tel; 0473 272002.

For Sale; SAM Coupe, 256k, 3.5" disc drive, technical manual, various disks, printer interface; £140.
Tel; **0473 272002**

For Sale;
Single drive Einstein with manuals; £60
Tel; **0473 272002**

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AMN PD LIBRARY, 39 PARKSIDE, WESTCLIFF-ON-SEA, ESSEX, SS0 8PR.

Einstein PD copying charge to **AMN members** is £2 per volume onto your supplied formatted disc or add £2 per 3" disc required, plus 50p postage + handling. To non AMN members it is £3 per volume.

IBM PC PD is supplied on disc, the copying charge to AMN members is £2 - 5.25" or 3.5" format plus 50p postage - handling. To non members it is £2.50 plus 50p. For the latest list send a SAE plus 5*17p stamps to cover the cost of photocopying.

HOW TO SUBMIT ARTICLES:

It is preferred that articles be sent on disc with an accompanying printout where possible. Very small pieces are O.K. on paper but remember even one liners take time to type in.

Please ensure your disc and it's case are labelled with your name and membership number. A return address label would be appreciated. Programs should contain REM statements with name and membership number and it would be useful if the version of DOS, XBAS etc used for the program was mentioned. Camera ready artwork should be in black ink and NOT folded.

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