THE Cadsoft GRAPHICS STATION

At last a complete cost effective solution...

Graphic Art

Graphic artists will find the rapid response and creative power of the system an invaluable aid to productivity. The subtle colours and effects which can be obtained are fully at the artist's command and can be output to colour slide or colour printer.

Television

The excellent animation and effects obtainable, coupled with broadcast quality resolution provide a dynamic ability unique in the price range. Full genlock and key facilities together with an optional frame grab complete the system.

Education

Full compatibility with the Acorn Master 128 computer enables a vast range of educational software to be utilised. The ease of use of the Graphic Designer program makes it ideal for students, yet its powerful features enable professional results to be obtained.

Industrial and Scientific Research

This high resolution computer with video digitiser and multiple frame store enables colour or density comparisons between images or computer generated profiles. The computing power can be increased to that of a mini computer by the use of optional coprocessors.

- **Broadcast quality television resolution**
- **Powerful window overlay for real time animation**
- **Multiple pictures in memory**
- **Subtle colours from large colour palette**
- **A complete integrated graphics system**
- **Easy to use but powerful software**

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Cadsoft GRAPHICS STATION

The CADSOFT Graphics Station is a user friendly, versatile, fast and cost effective creative designer's tool. When used with its accompanying software it provides the designer with a powerful means of creating both images and text at TV resolution for display on a monitor or for use in a variety of other ways. In addition to the main function as a designer's workstation, the package also provides all normal computer functions needed by the artist/ businessman.

No experience with computers is necessary to operate the system as most functions are controlled by the use of a high quality stainless steel pen which is coupled to a precision graphics tablet.

GRAPHIC ART

The CADSOFT Graphic Designer software has been developed with the designer's requirements in mind. Changes in design and colour can be made in a few seconds compared to hours of work with traditional materials while previously created designs can be recalled from disc and adapted to new situations with ease.

The Graphic Designer program enables the designer to define all colours in each of the palettes from a total of 4096 and save to disc, as well as having full control over colour, transparency, overlay, priorities, and background.

The built in command screen is used to show instructions and menus which allow him to select a wide variety of powerful effects and techniques. Facilities available to the designer are:

SHAPES - circle, arc, rectangle, ellipse, polygon (all in outline, filled or with definable line thickness).

LINES - freehand, rubber banded, corrected, centre, dimension and leader.

BRUSHES - round, rings, square, italic, colour cycle, airbrush and user defined.

MANIPULATIONS - move, duplicate, reverse, mirror, triple, quad, rotate, and cut & paste. Pattern duplicate, fill, grid lock (visible and invisible).

TEXT - two standard founts; others can be loaded from disc and user defined (optional extra).

CREATIVE VIDEO AND ANIMATION

The video frame grab (an optional extra) can be used to capture an image from a video camera for later creative use. Very fast pan, tilt and zoom are ideal for visual effects while the window overlay can be moved at frame rate with full control over its effect on other colours or screens. The ability to animate drawings stored in other screens by using the window, combined with screen movements, and overlay control enables complex effects to be obtained. These facilites, together with genlock and key make the system ideal for video applications.

Four full screens can be held in memory simultaneously at TV resolution with up to 1100 screens available at lower quality allowing long animation sequences to be achieved in real time. Sixteen palettes each with sixteen user defined colours enable the animator to produce work at TV quality by switching in segments between screens, colours or palettes to reveal or conceal images at TV frame rate.

EDUCATION

The system is compatible with software developed for the Acorn Master 128 computer and the Master Compact on 3.5" discs and can be easily programmed in BBC BASIC as Master plotting commands can be extended to the high resolution screen. The compatibility with Acorn products, the excellent graphics and animation, and the powerful co-processors available, open up many exciting possibilities. The Graphic Designer program is particularly well suited to education as it has been designed by an experienced educationalist to be exceptionally user friendly.

SCIENTIFIC AND INDUSTRIAL RESEARCH

The equipment can be upgraded to MS DOS compatibility with access to numerous business packages or to a full 32 bit computer with 1 Mbyte of memory. Alternative languages are available for both these processors including Fortran, Pascal, C, Prologue and Lisp, allowing mini and main frame computer software to be run. Twin disc drives provide a built in storage capability of over 1.2 Mbytes (640K per disc) with an optional internal 20 Mbyte Winchester drive.

OUTPUT

CADSOFT produced artwork can be delivered by ECONET to other computers or shared equipment, printed onto paper by colour printer, turned into 35 mm slides or delivered direct to a remote Graphics Station by telephone line and an optional modem. The image can be stored on video tape, mixed with live video or the output from a laser disk via the built in genlock and key facilities.

EXPANDING THE SYSTEM

The engineering design of the system has taken into account all current developments in the field and the system can be upgraded as new graphics design developments are released for production.

A COMPLETE COST EFFECTIVE SOLUTION

This compact low cost creative designer's work station is versatile and easy to use. Its facility for use as a complete business system with built in wordprocessing and spreadsheet capabilities make it the logical choice for the designer/businessman, schools and colleges, government agencies and research establishments looking for a fast, easy to use, adaptable, cost effective addition to their studio equipment.

This leaflet was designed and its copy was produced on the CADSOFT Graphics Station.

DETAILED SPECIFICATIONS

SYSTEM

The complete system consists of a desk top computer unit, a graphics tablet, IBM style keyboard and an optional high resolution colour monitor. The computer is mounted on a swivel base and fitted with a green screen, high resolution system monitor, twin double sided, double density 3.5 inch disc drives and three micro-processors with an option of a fourth if required. The graphics tablet has an accuracy of .01 mm and can trace through documents up to 20 mm thick. The monitor has a dot pitch of 0.31mm, a dark glass high contrast screen and a tilt and swivel case. It is chosen to match the colour and resolution of the system.

The input-output processor is an Acorn Master 128 with all rear mounted sockets directly accessible. The front mounted edge connectors on the board can be reached by removing an access panel at the lower front of the computer. It is thus possible to run external self powered 5.25" discs, second processors or scientific equipment and to interface these to the high resolution graphics.

SIZE

Computer: 540mm wide, 385mm deep, 330mm high (approx. 21 x 13 x 15")
Graphics tablet: 480mm wide, 400mm deep (approx. 19 x 16")
Colour monitor: 385mm wide, 385mm deep 410mm high (approx. 15 X 15 X 16") Screen size 355mm diagonal (14 ")

RESOLUTION

832 x 576 pixels or 768 X 574 pixels (specified when ordering). The former gives the same aspect ratio as the Acorn Master Computer, while the latter gives slightly squarer pixels but reduced horizontal resolution.

SPEED

Drawing 1 million pixels/ second; block moves at 8 million, compared to the BBC model B computer which draws at only 10,000 pixels/sec.

MEMORY

Screen Memory: 1 Megabyte providing four screens at TV resolution and up to 1100 when zoomed 16 times. Program memory 128K, expandable with co-processors to 1M byte.

COLOURS - 16 palettes, each with 16 colours from 4096 shades.

ZOOM - 1-16 times independent vertical and horizontal

MOVEMENT - pan and tilt to within 0.5 pixel, centre at specified point.

INPUT-OUTPUT PROCESSOR

Based on Acorn Master 128 with 65C12 2MHz processor, 128K RAM, 128 K ROM (BASIC, ADFS, DFS, EDIT, VIEW, VIEWSHEET, TERMINAL). 48K CADSOFT ROM (Colourserv, Textserv, Highres). Master drawing commands fully supported (except ellipse) for automatic transfer to high resolution. Compatible with Master 128 and Master Compact software on 3.5" discs.

VIDEO PROCESSOR

16 bit Hitachi ACRTC triple processor with 1 Mbyte RAM accessed via 1MHz bus. Four full screens in memory with source of base, lower, upper and window screens individually specified from anywhere in the memory. Base screen can pan, tilt and zoom while window has full control of colour priorities and overlay effects. Interrupt driven screen roller accessible from BASIC. Internal genlock (line phase jitter better than +/- 5 ns) and key output. Output via 75ohm BNC connectors (Red, Green, Blue, Sync). All Master 128 graphics commands (except ellipse) can be directed to the video processor when required and are fully accessible from BBC BASIC together with extra commands for the window overlay etc.

TABLET PROCESSOR

8085 6 MHz processor with 8K ROM providing coordinates from the 0.01 mm resolution graphics tablet. Input via a high quality stainless steel pen or optional cross wire cursor.

SYSTEM MONITOR

Internal high resolution nine inch green screen. A standard RGB colour monitor can also be used externally to display the system monitor output in colour.

COMPUTER FUNCTION

Full built in word processor and spreadsheet facility. Compatibility with Acorn software. Networking optional, via Econet system.

CO-PROCESSORS (optional extras)

512K MS DOS processor providing access to large range of business software. 80186 10MHz 16 bit processor, 512K RAM. Master Scientific, 32016, 32bit 8 MHz processor with 1Mbyte RAM, NS32081 floating point processor, FORTRAN 77, ISO PASCAL, BBC BASIC, C and 32bit assembler.

VIDEO FRAME GRAB (optional extra)

Internal video digitiser to match resolution of video board. 1 volt composite video input (colour or black & white) digitised in 16 colours as set by the current palette.

OUTPUTS AND INPUTS

High resolution: 1 volt 75 ohm linear RGB via BNC sockets at upper rear of case - red, green, blue, sync, key, genlock, video input (for frame grab). 1 volt 75 ohm linear. Video input requires a 1 volt composite video signal. Graphics tablet: 15 way D type socket at upper rear of case, 6 pin socket for pen at left and right of tablet.

Acorn Master 128: at lower rear of case - 6 pin Din socket (RGB), BNC socket- composite video (Reduced in output due to internal monitor), Phono - UHF channel 36, Phono - sound output, 7 pin Din - cassette recorder, 5 pin Din - RS423 serial interface (75-9600 baud), 5 pin Din - Econet (optional extra), 15 way D connector - analogue input. 26 way ribbon socket at upper rear for standard Acorn parallel printer cable.

Under lower front panel: ribbon cable connectors for - disc interface, printer port (extended to rear panel), user port, 1MHz bus and Tube. The internal disc units, graphics tablet and video processor occupy some of these sockets in normal use but can be unplugged if required. Mains input - 240 volt, 50 Hz supply, approximately 150 watts (depends on co-processor fitted). Fused mains input socket and main switch at rear.

The specification and details listed above are subject to improvement and change.

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