

# E COMMODORE COURIER

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SUMMER 1982

## COMMODORE POISED TO REPLACE APPLE II New computer announced

Commodore recently announced a new addition to their range of microcomputers and again Commodore has broken the price/performance barrier. Called the Commodore 64, this new personal computer offers many new and advanced features at a fraction of the cost of competitive computers.

The Apple 11 personal computer is the closest rival to the Commodore 64, but when price and features are compared, Commodore is confident the Commodore 64 will replace the Apple 11 as an alternative to users wanting the features of colour, high resolution graphics and sound, all at a realistic price.

The Commodore 64 made its first Australian appearance at the Data '82 show in Sydney in August and deliveries are expected in October. The Australian price will be under \$1000.00 making it a more competitive alternative to other popular personal computers.

of computers starting from the music, and computing cap-available collections of software. popular VIC 20 at \$399.00, to abilities. advanced buisness systems Australia.

Commodore 64 lies in a new music snythesizer is built into developed a variety of programs microprocessor developed by the Commodore-64, which Commodore's subsidary comp- can be connected to a high many suppliers for much, any, MOS Technology. The quality sound system to fully much more Popular programs 6510 uses the same instruction appreciate this feature, found set as the popular 6502, but only with dedicated synthesizers. data management, word prohas additional input/output The Z80 microprocessor is lines. This significant advance available as a plug-in optional sophisticated games and music

retailing at over \$7,000.00. 64K (64 thousand bytes of and the use of spritee This range of products enables storage) as standard, the characters to give three-Commodore to lead the Commodore-64 offers more dimensional objects that can microcomputer suppliers in built-in memory storage than move over, under, and behind ustralia. any other popular personal one another. The success behind the computer. A high quality Commodor

in technology, provides a extrato allow the Commodore synthesis.



Commodore 64

With the Commodore 64, personal computer with out- 64 to run CP/M, giving users Commodore can offer a range standing colour, graphics, access to one of the largest

> The most visible feature is With a memory capacity of the high resolution graphics

> > Commodore has already for the 64 and is working with include financial planning, cessing, education and

> > > continued on page 2

# SHEARSON AMERICAN EXPRESS EQUITY RESEARCH BULLETIN

Since the introduction of the VIC-20 computer, sales have exceeded the anticipated demand. The atributed to the low price tag of \$399.00 and the many features of colour and sound.

With the release of a large number of cartridge games and the availability of a range of peripherals, the VIC-20 offers expansion capabilities at a price not available with other personal computers.

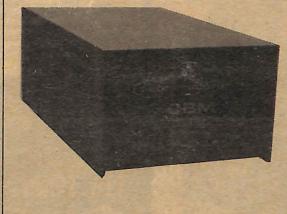
Sales have exceeded 1500 units per month, with over 100 retail outlets supplying and supporting the VIC product range
"Home computers are not simply a fad, they are here to

stay and will become part of the Australian Home in the 1980's much as television set have", said Commodore's Managing Director, Nigel Shepherd.

"When Commodore pioneered the microcomputer industry in the mid-1970's with the introduction of the PET, it marked the dawn of an entire new era that has become the 'era of the home computer'. Today a VIC-20 home computer can be purchased for less than a colour television receiver and users can learn computing concepts, develop their own programs, and reach well beyond previous limits for education and recreation."

"Video games helped pave the way for home computers", Shepherd said, "because they were low cost and simple to connect to the television receiver. Now the VIC-20 is available at a similar price and offers many of the games, the home computer is literally takeing over from these less sophisticated

## **INCREASE STORAGE** CAPACITY



storage capacity up to 9 megabytes,

Commodore's recently announced hard disk memory overheads are required drives extend the range from the host computer to hard disk units, allowing of Commodore peri-support the disk unit and internal transfer rates up to 5 pherals, to offer one of allows flexibility in configuring megabytes per second, an the largest and most systems to meet a price and increase of 125 times floppy the largest and most systems to meet a price and flexible system config- capacity criteria. urations available from micro-computer supplier.

The model CBM 9090 offers 9.57 megabytes of dollar value. unformatted storage capacity (6.38 megabytes formatted) and the CBM 9060 offers 7.46 megabytes unformatted (4.97 megabytes formatted).

the hard disk units have an the CBM 9060. intelligent disk operating system built into the drive, Commodore business software allowing the units to be Providing increased plugged into the IEEE 488 drives, allowing increased bus which is standard on all storage capacities similar to CBM computers.

This features means that no

Using the latest Winchester representing the best byte for

supports relative and sequential file storage to the full disk capacity. The number of blocks available to the user on

Similar to all other a formatted disk, is 29,162 for Commodore disk peripherals, the CBM 9090 and 19,442 for

The range of popular will support the hard disk mini-computer configurations.

Speed of data transfer is a significant advantage with the disk storage.

The hard disk units complitechnology, these drives are ment a range of floppy disk highly reliable and low cost, drives that range from a low cost single drive of 170 kilobytes (CBM 2031), to The disk operating system dual drives of 340 kilobytes (CBM 4040), 1 megabyte (CBM 8050) and 2 megabyte (CBM 8250) capacity.

# CARTRIDGE SOFTWARE ANNOUNCED

A vast range of cartridge software has been announced to support the popular VIC-20 personal computer and the recently announced Commodore-64.

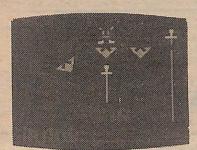
A few of the many cartridges are pictured here, but what is a mazing is how you'll see them. Using the latest technology in these microcomputers, you will see an amazing variety of colours never offered before and a full range of sound (zap, ping, boom - to name just a the computer and invent your own sophisticated (or unsophisticated) games.

The resolution will truly rival arcade machines, allowing you all the popular games in your own living room.

You've never seen such a sound and light show on a micro-computer before. The joysticks and paddles allow you to take control of the game and become a fighter pilot, a racing car driver, a martian fly, or whatever your imagination can deal.

Which is not to say the fun has to stop there. You can also let your imagination take over

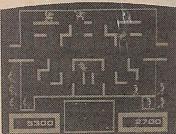
Commodore computers are not just a video game, but a whole expandable system.



GORF



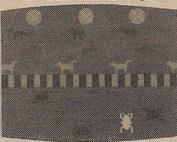
**OMEGA RACE** 



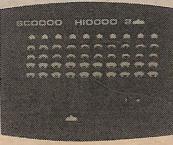
**WIZARD OF WOR** 



SPIDERS OF MARS



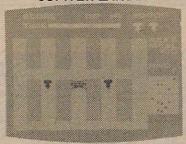
MENAGERIE



**AVENGER** 



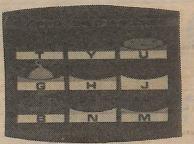
JUPITER LANDER



RADAR RAT RACE



MIDNIGHT DRIVE



MOLE ATTACK



HOME BABYSITTER



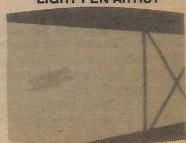
MATH TEACHER



VISIBLE SOLAR SYSTEM



LIGHT PEN ARTIST



ACE OF ACES

#### **NEW COMPUTER** ANNOUNCED **CONT. FROM PAGE 1**

Plus - and a big plus for available as a plug-in optional extra educators - you can have access to programs developed for the Commodore PET. The Memory: PET family of computers are 64K of RAM. 39K are user-in more schools around the accessible for BASIC programs; world than any other computer. The BASIC language of the Commodore-64 is the same as BASIC language. the PET, allowing all the educational programs to be Keyboard: used on either computer.

The Commodore 64 is simply plugged into a standard televsion receiver and is ready to use. As needs grow, the system can be expended with from keyboard. disk drives, printers and

The Commodore-64 is surprisingly easy to learn to SHIFT/SHIFT LOCK, to select use, even for those not familiar either upper-lower case or upper case with computers. Clear, 'user-with computers. Clear, 'user-with computers' and PET graphics; RVS ON/OFF, take the user through each operation, step-by-step.

**FEATURES** 

#### **Technical Details.** Microprocessor:

Uses a 6510 microcomputer, designed and produced by Commodore's MOS subsidiary. Z80 microprocessor

to allow the Commodore 64 to run CP/M.

52K for machine language programs. 20K of internal ROM contain the operating system and Commodore

Full-size typewriter style. 66 keys,

Colour and the full set of 64 PET The graphics can be selected directly

Editing keys include: CTRL, to set communications capabilities. character colours and execute special commands; RUN/STOP, to friendly programs and manuals to reverse text and background colours on screen; CLR/HOME, to move cursor to "home" position, or clear screen of all characters; Sound: INST/DEL, to insert or delete on the screen; RESTORE, to reset even some dedicated after

RUN/STOP; CURSOR KEYS, to right or left; RETURN, for entering Four waveforms are available commands and instructions.

New display chip generates 40 columns by 25 lines on screen. 255 combinations of border/background colours, 16 text colours and use of all 64 PET graphic characters. It also allows the user to construct programmable characters to replace the normal set.

High-resolution graphics mode of 320 x 200 pixels for exceptional the VIC range of peripherals detail and clarity in games or including: animation. Can use 16 colours Datase simultaneously.

uper and lower case. Four unassigned programmable function keys.

Colour and the full set of 64 PET.

The follower case. Four case case tess are cased to games and standard audio tape cassettes. Single-Disk Unit: Uses standard and audio tape cassettes.

Single-Disk Unit: Uses standard and of the case case tess.

Single-Disk Unit: Uses standard and of the case case tess.

Colour and the full set of 64 PET. pass in front of and behind each

> objects enhances ability to create five single-disk units. graphics. Objects can be scrolled

COMMODORE

6581 Sound Interface Device characters and correct text directly provides music and sound to rival music operating synthesizers.

APPLE

IBM<sup>®</sup>

Produces three independent voices, move the screen cursor up, down, each with a range of nine octaves. sawtooth, triangle, variable pulse

and noise. Includes programmable ADSR (attack, decay, sustain, release) generator. Programmable filter can be individually selected for each voice; provides low-pass, high-pass,

band-pass or notch outputs. Variable resonance and master volume control.

#### Peripherals The Commodore 64 will support

Datasette Recorder: A low-

cost tape unit which allows the 8 independently movable Sprites storage of programs and data on

Commodore 64 provides programs and data. Each diskette collision detection and instructs the holds up to 170,000 characters of computer to take action when Sprites information. Disk units include their hit one another. Allows object own microprocessors and memory display priority, so that Sprites can systems, and therefore don't require memory resources from the Commodore 64 main unit. The Independent magnification of Commodore 64 will support up to

Printer: The VIC 1515 printer vertically and horizontally, pixel by attached directly to the Commodore Prints 30 character per second, dotmatrix. Uses plain tractor-feed

Interface Cartridges: Specialized cartridges allow the Commodore 64 to use various standard devices,

**ATARI** 

TANDY

IEEE-488 Cartridge: Adapts the 64 to accept the full range of CBM peripherals, including disk

PET Emulator Cartridge: Allows users to run most of the signals to a monitor.

including printers, controllers and programs designed for PET systems Cartridge Slot: rithout modification.

> Audio and Video Connections: Direct outputs from the Commodore 64 connect audio signals to high-quality audio systems, and video

Will accept games and other applications designed for Commodore 64 on plug-in cartridges.

Other Interfaces:

Provide access for two joysticks, four



FOR BUSINESS, EDUCATION AND PLEASURE.

THE MICROCOMPUTER HOUSE probably has the largest showroom for Commodore products in the inner city area!
We specialise in both HARDWARE and SOFTWARE (over 800 programs) plus we can do

REPAIRS and CONVERSIONS, PROG HADWARE AND SOFTWARE, COMPUTER FURNITURE, plus lots, lots more

THE MICROCOMPUTER HOUSE has three exclusive software programs - THE FRIEND SERIES. Friend 1 (Word Processor) is available as a chip, disk or tape. Friend 2 is a dual disk based system Mailing List and Friend 3 is a ROM chip Data Handler for the 4000 and 8000 series. Also available are HI RESOLUTION BOARDS for the 4000 and 8000 series. Brand new from Code Works (Cursor) are programs designed specifically for the VIC 20

computer – these are known as VIXEL programs.

ROM ADD-ONS: Arrow – fast tape LOAD/SAVE. PIC Chip – the graphics design chip.

Toolkits – Full range of toolkit type chips – a must for the programmer, extends BASIC with up to 40 extra commands!! The range includes, Disk-O-Pro, Command-O-, etc. Another chip is the MicroMon - the toolkit for the machine language user - includes Assembler/Disassembler functions.

If you are after a computer, a system or software for either business or pleasure then why not contact John Giudice today!

#### TRS-80 III® 800® ADVANCED PERSONAL COMPUTER FEATURES 64K YES YES(66 keys) YES YES Built-in User Memory YES YES(61 keys) YES YES(65 keys) NO YES YES YES Programmable Real Typewriter Keyboard Graphics Characters (from Keyboard) YES(52 keys) YES(83 keys) NO YES Upper Only 143K Upper & Lower Case Characters Max. 5.25" Disk Capacity Per Drive 96K 170K/1000K **AUDIO FEATURES** YES NO NO YES NO NO NO NO YES Sound Generator Music Synthesizer Hi-Fi Output NO VIDEO FEATURES YES NO **EXTRA** EXTRA YES TV Output INPUT/OUTPUT FEATURES YES NO YES NO "Smart" Peripherals SOFTWARE FEATURES YES NO YES YES CP/M Option (Over 1,000 Packages) YES GAME MACHINE FEATURES YES YES Cartridge Game Slot Game Controllers

### NOW YOU CAN SUBSCRIBE

C-30 cassette with 5 programs plus the cover program. Each FOR YOUR subscription means a total of 36 programs at around \$1.19 each!! COMMODORE PET

116 - 120 Abercrombie Street



Chippendale, N.S.W. 2008 Phone: 698 7866 or 698 7076 In Brisbane CW Electronics 416 Logan Rd., Stones Corner Ph. 397 0808 or 397 0888

## COMMODORE ACCOUNTING SOFTWARE

ess computer.

packages.

To support the popular The main feature is flexibility your budget and capacity and be configured to suit your and creditor information and capacity. Your Commodore of local business and is fully capacities can be configured to change. Commodore have de- suita particular disk drive from A range of printers allow allows features such as, The capacities quoted below for your requirements.

CBM 8000 series busin- in configuration, as the ledger grow as your requirements requirements.

veloped a sophisticated the range of Commodore disk letter quality presentation or automatic debtors invoicing reflect those for the CBM The Commodore Accounting suite of accounting peripherals. This allows a high speed dot matrix printing. and inventory control, General 8050 dual disk drive with 1 software has been developed system to be installed to suit The accounting packages can Ledger updating with debtor million bytes of storage in Australia to reflect the needs

creditors posting with inventory Dealer will be able to advise on supported by Commodore and Integration between ledgers updating.

the capacity and configuration your Commodore Dealer.

## **COMMODORE DEBTORS LEDGER**

Reference entry. Initialises data diskettes and records the user name and address.
 New debtor. Allows the information for a new debtor.

tor to be entered.
3. Modify/delete debtor. Allows the information held on a particular debtor to be altered, or the removal of a debtor with no outstanding balance.
4. Journal entry. Allows a debtor's balance to be ad-

justed.

5. Invoice entry. Allows information on each invoice to be posted to a debtor's account, and update sales dissection and area analysis.

6. Credit note entry. Allows information on each credit note to be posted to a debtor's account, and update sales dissection and area analysis.

7. Cash receipt entry. Allows the entry of payments and settlement discount to a debtor's account.

8. Sales dissection maintenance. Allows sales dissection codes to be added or amended.

ssection codes to be added or amended.

9. Sales dissection enquiry. Allows screen enquiries for all sales dissection codes, showing current month totals and a month by month analysis.

10. Account enquiry. Allows enquiries to be displayed on the screen or printed, for any debtor's account, showing balances outstanding and all current transactions.

type e.g. all invoices.

14. Trial balance. Prints a report of all debtors accounts and their balances, with information on the date of the last payment and amount received in the current accounting period. This report can be produced in account number order, or in alphabetical order

to 'age' all debtors balances and clear transactions.

16. Statement print. Prints a statement for each debtor showing all current transactions and balances outstanding. Statements can be produced in alphabetical order or in account number order, and accounts with zero balance can be suppressed from printing.

17. Sales dissection print. Prints a report of all dissection codes giving the month-to-date and year-to-date totals.

17. Sales dissection print. Frints a report of all dissection codes giving the month-to-date totals.

18. Collection letter entry. Allows the entry of two standard letter formats which can be printed for all or a selected group of debtors accounts e.g. 90 days overdue. This option also allows a message to be entered which will print on each debtor's statement e.g. announcement of new product, office holiday.

19. Collection letter print. Prints the standard letter formats as entered in option 18.

20. Debtors listing. Prints a report of all debtors accounts, detailing the non-financial information. This report can be produced in account number order, or in alphabetical order of debtors.

21. Malling labels. Prints labels for each account for attachment to parcels or envelopes.

22. Column descriptors amend. Allows the headings that are printed on the statements to be amended. This allows the user to customise the statement presentation.

23. Customer sales analysis. Prints a report of all debtors showing total purchases month-to-date, year-to-date and last year. This report can be produced in account number order, or in alphabetical order of debtors.

debtors.

24. Salesman area maintenance. Allows the addition or modification of the salesman/area categories, and establishes commission percentages if required.

26. Salesman/area malysis. Prints a report on all salesman/area categories detailing sales figures, budgets and commission earned for the current month and year-to-date.

28. Commission statement print. Prints a report for each salesman/area, showing all transactions for the

current period and the commission earned. 29. End. Exit from the debtors ledger.

SYSTEM CAPACITIES

700 debtors accounts per diskette. This allows the name, address and account details to be stored for 700 debtors per diskette. Up to 10 diskettes can be used, however each diskette will be treated as a seperate debtors ledger, each holding it's own analysis totals.

erate debtors ledger, each holding it's own analysis totals.

2900 transactions. Each time a posting is made to a debtor's account e.g. details of an invoice, credit note, cash receipt or journal, the details of that posting date, reference and amount) are stored in the transaction file. This file is used for transaction reports, and to produce statements for each debtor.

20 system sales dissections. These sales dissections are reserved for use in conjunction with the integrated invoicing program, and detail values of the sales tax, freight etc., generated during invoicing. 79 user sales dissections. Whilst posting the details of an invoice or credit note to a debtor's account, it is possible to dissect the total amount posted into these 79 dissection areas. These areas could be used or product analysis e.g. which types of product are selling better than others, or for sales analysis e.g. how the sales were made, by counter sales, phone orders etc.

orders etc.

99 salesman/area records. Total sales dissected into these categories can be obtained by allocating an applicable code to each debtor. This facility could be used to obtain sales by state or branch, or to produce sales statistics for each sales representative.

SYSTEM CAPACITIES

720 creditor accounts per diskette. This allows the name, address and account details to be stored for 720 creditors per diskette. Multiple diskettes can be used, however each diskette will be treated as a separate creditors ledger, each holding its own analysis totals.

2300 transactions. Each time a posting is made to a reeditor's account e.g. details of an invoice, credit-note, cash payment or journal, the details of that posting (date, reference and amount) are stored in the transaction file. This file is used for transaction reports, and to produce remittance advices for each creditor.

10 system purchase dissections. These dissections provide the total invoices, credit notes, discounts and cash payments that have been posted, on a month-to-date and year-to-date basis.

date and year-to-date basis. 89 user purchase dissections. While posting the details of an invoice or credit note to a creditor's account, it is possible to dissect the total amount posted, into these 89 dissection areas. These dissections could be used for purchase and expense analysis.

SUMMARY OF CREDITOR OPTIONS

records the user name and address.

2. New creditor. Allows the information for a new creditor to be entered.

3. Modifydelete creditor. Allows the information held on a particular creditor to be altered, or the removal of a creditor with no outstanding balance.

4. Journal entry. Allows a creditor's balance to be

account

8. Auto cash payments. The system will automatically generate a cash payment transaction for all rectitors accounts satisfying the selected criteria e.g. 30 days outstanding etc.

9. Purchase analysis entry. Allows purchase dissections to be added.

ions to be added.

10. Purchase analysis update. Allows purchase dissection details to be amended.

11. Account enquiry. Allows enquires to be displayed on the screen for any creditor's account, showing balances outstanding and all current transactions.

creditors, listing purchases and discounts received for the month and year-to-date.

21. Ageing. Used at the end of the accounting period to age all creditor accounts and clear transactions.

22. Creditor listing. Provides a listing of all creditors accounts, detailing the non-financial information on a count such as the continuous and accounts and period of the 23. Mailing labels. Produce labels for selected accounts, for attachment to parcels or envelopes.

24. End. To exit from the creditors ledger.

## **COMMODORE STOCK CONTROL**

## **COMMODORE GENERAL LEDGER**

SUMMARY OF OPTIONS

Reference entry. Initialises data diskettes

and records the user name.

2. Chart of accounts maintenance. Allows the entry of additional general ledger accounts, and the modification or deletion of existing

accounts.

3. Budget maintenance. Allows budget figures to be entered to the revenue and expense accounts for all 12 periods of the financial year.

4. Period maintenance. Allows the user to allocate the beginning and ending of the financial year, and to nominate the period in which processing will begin.

5. Save/create standard chart. Allows the user to select the standard chart of accounts as

5. Save/create standard chart. Allows the user to select the standard chart of accounts as supplied and record those accounts on the data diskette.
6. Private ledger enquiry. Displays on the screen the detail and current transactions for

selected accounts.
7. Journal postings. Allows the entry of debit

and credit posting to the general ledger

accounts.

8. Transfer totals. Transfers the monthly totals from the debtors and creditors data diskettes to the relevant general ledger accounts.

9. Transaction print. Allows a report to be printed of all current transactions by date order, period order, batch order, or source

type.

10. Budget print. Prints a report of the budgeted figures for selected accounts for all periods.

11. Private ledger print. Prints the account detail with all current transactions for selected

accounts.

12. Chart of accounts print. Prints a report for all accounts showing account characteristics.

13. Trial balance. Prints a report of selected accounts showing the month-to-date and year-to-date balances as a debit or credit.

14. Balance sheet. Prints a balance sheet of all

asset and liability accounts.

15. Profit and loss. Prints a profit and loss.

report for the current month and year-to-date.
16. End of period ageing. Used at the end of each period to clear transactions.
29. End. To exit from the general ledger.

SYTEMS CAPACITIES

Total number of accounts is 999. Accounts 001-299 reserved for balance sheet. Accounts 300-999 used for profit and loss items.

items.
Total number of current transactions is 2280.
100 departments available for analysis reporting.
Standard chart of accounts supplied, but can be

## SUMMARY OF STOCK OPTIONS

SYSTEM CAPACITY Up to 1440 stock records with the following

to 1440 stock records with the formation:
Stock code
Description
Tax code
Dissection code
Supplier account number
Date of last sale
Storage location
Weight per unit
Quantity on hand
Quantity on hand
Quantity on order
Re-order level
3 tax free selling prices
Cost price (average)
Cost price (average)
Cost price (last)
Sales quantity (year-to-date)
Sales value (month-to-date)
Sales value (cost of sales (month-to-date)
Cost of sales (month-to-date)
Cost of sales (month-to-date)
Cost of sales (year-to-date)

Reference entry. Initialises data diskette and records the user name and address.
 New stock entry. Allows the information for a new stock item to be entered.
 Modify stock. Allows information to be modified for any stock item.

from the system.

5. Invoice entry/print. Allows invoices to be entered and printed, using the stock and debtors data

diskettes.

7. Stock enquiry. Allows an enquiry to be made on any stock item, detailing all the information held. This information can be printed if required.

8. Stock adjustment. Allows the stock-on-hand quantities, the sales value and cost of sales to be extended.

the stock-on-order value. This option can integrate
to the COMMODORE CREDITORS LEDGER to update the Treditors account by the value of stock

A MUST FOR COMMODORE AND VIC-20

14. Stocktake update. Transfers the stocktake quantity to the stock-on-hand quantity.
15. Stock report. Prints a report of selected stock items showing the "static" information for each item.
16. Sales analysis. Prints a report for each stock item sold, of the month-to-date and year-to-date quantities, sales value and cost of sales, with gross profit and percentage margnis.
17. Stock inventory levels. Prints a report for selected stock items, detailing quantities on hand, on order, by stocktake, and the re-order level.
21. Stocktake forms. Prints a report of each item and location, to record quantities counted during stocktake.

and location, to record quantities counted during stocktake.

22. Stock Variance. Prints a report for each stock item on which the stock-on-hand quantity differs from the value entered at stocktake.

23. Price list. Prints a price list for selected stock items, from the selling price category nominated.

24. Reorder report. Prints a report for each stock item on which the stock-on-hand quantity is less than the reorder quantity.

26. Ageing. Performed at month end to clear month-to- date quantity and sales values for each stock item. 27. Stock file sort. Sorts all stock items into numeric/ alphabetic order.

appasetic order. 28. Modify column descriptors. Allows the headings which are printed on the invoices and credit notes to be amended, allowing the users to customise their 11. Stock on order. This updates the stock-on-order quantity to reflect orders from suppliers.

12. Stocktake entry. Allows the quantities counted at stocktake to be entered, so that a comparison.

29. End. To exit from the stock control system.

## BRISBANECENTRE FOR CW COMMUNICATIONS

Australian computerists the that endear these units to the world. VK4 AHD, better operators such as automatic time (general manager of CW ID auto call and built-in Phase Electonics and The VIC Locked Loop Demodulator. Centre) is an enthusiastic 'Ham' radio operator and With the release of the VIC-20 his company a very succe- CW Electronics has now obtained

Electronics have dealt in a wide software. range of communication and The VIC-20 HAMSOFT plug in range of communication and The VIC-20 HAMSOFT plug in programmers, and industrial use. range has lead the field within (RTTY) and American Standard Australia in the development Code for Information Interchange communications. (ASCII).

RTTY, ASCII and Morse

HAMSOFT was developed to release a 40/80 Column display Systems

turned the Commodore into a sophisticated communications computer. Not radio operators but also by Queensland. CW found that Power off and memory \*No external power supply exploration companies in Northern interest grew, primarily through word of mouth (or morse key) on the air ways, and markets openned up in Papua New Guinea, New tated. They also are the Australian

Zealand and the Pacific area. The Marcotronics units give a and Instant RAM battery supported CW Electonics are offering a prepackage containing a word chips that plug directly into release special price on this unit. orientated Editor with eight Commodore and other com- for further information contact: (use for testing, station identifica- computer to maintain up to 8k of CW Electonics/The VIC Centre tions and other purposes), an memory after the power has been 416 Logan Rd. instant replay function for message turned off. These chips come in Stones Corner conformation and message library standard 24 pin industrial package Brisbane 4120

Starting in a small way incoming messages onto disk or VK4 AHD has been giving cassette. There are other features known as Brian Beamish and ID transmission, 10 minute

VIC talks to the World ssful Commodore dealer. the distribution rights to a number From its commencement CW of VIC orientated systems and

use with The Interface (also Over two years ago CW distributed through CW Elect-Electronics started its import side ronics). The Interface is a of the business with the complete transciever-to-computer \* 40/80 column display (not Marcotronics range of RTTY, modem capable of decoding and ASCII and Morse (CW) interfaces that turned the AFSK tones for RTTY and Local NUCCEM graphics ASCII. The Hamsoft/The Interface/ VIC-20 combination offers one of \* All cursor control U/L case only were these used by amateur the most versatile communications \* Switchable from BASIC computer packages on the market today (and very cost effective).

maintained

This Brisbane based company are \* not solely communications orienrepresentative for Instant ROM keyboard programmable messages patable micros that enable the Brian or Bill enabling the operator to save and are ideal for enthusiast, (07) 397 0808



primarily with the Commodore Morse Code(CW), Radio Teletype comes a 24hr clock that maintains VIC-20 40/80 DISPLAY

> cartridge for the VIC-20. The cartridge wil feature:-

★ Load all VIC/CBM Programs

withoput losing program \* No alterations to VIC required

Works together with 32K Basic VIC Computer. Expected retail price will be

approximately \$379. CW Electonics are offering a pre-

The Interface - tranceiver-to-computer modem

PROGRAMS/HINTS PRODUCT INFORMATION

OWNERS AND USERS. IT'S LIKE AN EVER

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MAGAZINE & TIMES A YEAR

EXPANDING APPLICATIONS AND

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The Scource/The beginning
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How the VIC was born
VIC system memory many

COMMODORE MAGAZINE VIC Released New CBM Software

TO:	DORE	MAGA	ZINE C	IIDEC	PIPTIO	AIC
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Commodore Courier - Summer 1982 3

(1 yr subscription)

## COMMODORE STATIONERY AVAILABLE

With the advent of ware and packaged software, business software will run on forms various systems became apparent.

Traditionally, the continuous business forms. business forms suppliers meet current needs.

All the major functions required

from accounting and stock control,

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A flexible information manage-

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be performed by SILICON without having to have expensive OFFICE. This can mean anything dedicated machines lying idle and

small/medium sized it stands to reason that there these forms and in addition, business computers should be an instant supply Rediform stock forms can be and packaged soft- of business forms to comple- overprinted with company ware, the need for ment a system. There are logos, and specific wording off-the-shelf business also considerable savings in relating to terms of sale, etc. support forms costs to end users who business do not wish to purchase small, convenient, carry packs

business forms is not always software package. This new storage of printouts appropriate for small/medium off-the-shelf product is computer installations, partic- marketed under the Rediform addressing requirements of ularly the first time user, for label, a brand name which the small computer user,

many hardware and software offering include a wide range labels in a range of sizes and suppliers being able to deliver of Commodore approved numbers across the sheet ex-stock to the first time user. stock computer forms designs, provide a quick convenient As the computer industry with space provided for method of providing effective moves increasingly towards computer entry of personalised identification. off-the-shelf supply of hard- details. All the Commodore The after-print requirements

staff wasting valuable time.

The Filing

At the heart of the SILICON

OFFICE is a sophisticated

Also offered is a range of totally custom printed com- of carbonless stock computer puter forms and instead opt printout forms, available in a for standard designed instant range of commonly used sizes, either singles or multi-One major business forms part. These small carrypacks operated through direct sales manufacturer has recently are designed to be convenient representation - calling on released a product range of to carry from point of end users and assisting with instant carbonless business purchase and allow direct forms and systems design to forms which are packages for feeding from carton to printer retail throughout the data during use, as well as The method of purchasing dealer who supplies the providing suitable permanent

To meet the labelling and many reasons. A vital con- describes the product aptly. economic quantities of continsideration is the ability of Components of this new uous Rediform self-adhesive

are an additional consideration for the small computer user if maximum benefit is to be gained from a data processing system. Rediform offers a total range of forms handling and storage products to accomodate these requirements. Rediform print-out and data files are available in a distinctive range of colours which together with a portable storage trolley, provide an efficient method of storing printout which needs to be referred to often.

A table top mini detacher and separate mini decollator complete the Rediform forms handling range. These units are portable and easy to operate, and will detach and separate multi part continuous forms quickly and efficiently.

Whatever the end user's requirements, Rediform offers some interesting alternatives to traditional computer forms supply, by being available on demand from Commodore dealer.

#### **WE CAN TURN** COMMODORE **DISKS & CASSETTES** INTO

- leaflets/brochures
- catalogues/price lists
- Manuals
- books/reports

etc. etc.

Aeryn Beamish Graphics Pty Ltd can
convert your Commodore text files from
lisk or cassette into quality phototype
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art, ready for the printer and probably get
you a better price on your printing than
you will get elsewhere.

COMMODORE COURIER
was produced by MBG from
was produced by MBG from

was produced by MBG from WORDCRAFT disks supplied by COMMODORE



MERVYN BEAMISH GRAPHICS PTY LTD 82 Alexander St., Crows Nest NSW 2065 (02) 439 1827

choice of working in plain English complex mathematical

expressions Results can be printed in any form you desire, using the word processor, or stored on diskette for future reference.

The Communications SILICON OFFICE can be linked up to other SILICON OFFICE systems to transfer information over long distances. By using modems or accoustic couplers, a normal telephone line can be used

mathematical calculations you are can be stored, printed or processed

CONFIGURATION

The printer can be selected to suit

Further information and a demonstration of the powerful SILICON OFFICE program can be provided by your Commodore



## Rediform

**Instant business** forms and ancillary products for the small computer user.

Rediform is a totally new concept in the supply of forms requirements for the small computer user. No longer do new users need to wait for delivery of importan

The Data Dealer who has supplied the software package can also supply the relevant pre-set forms, off the shelf, along with other start-up requirements. Rediform offers a range of

#### Pre-set instant business forms:

Rediform pre-set carbonless forms designs are specially designed for common business applications such as invoicing, accounts payable, accounts receivable etc., allowing every business to take advantage of expert and accurate forms designs approved by computer suppliers

#### Stock computer print-out paper:

Rediform carbonless print-out paper is available in convenient carry packs in a range of sizes-either singles or multi-part. The carry pack doubles as a storage module for permanent filing of print-out.

In addition, Rediform offers a range of Self-Adhesive Continuous Labels, Forms Files, and Forms Handling Equipment



Rediform products and information are available from your Data Dealer.

## completely new concept in cost effectively throughout a advising the stock situation. omplete working day. You can switch from word SILICON OFFICE allows full

letters and documents. The text is displayed on the screen and printed as required. Editing is

information management system. Document size is limited by This allows the user to 'file' away diskette storage, for example one large amounts of information on CBM 8050 diskette will hold more floppy diskettes.

What is stored is up to the user, than 150 A4 pages.
Text from 20 to 125 characters in

stock lists, patient lists, sales width can be handled, with tab ledgers etc. The user can configure stops and ruling screens to create stillicon OFFICE for many multi-column formatting.

different types of applications.
To design a SILICON OFFICE configuration is like setting up a card index. You can choose your own screen design and when information is entered, SILICON OFFICE will store the information automatically. It is like a giant you transfer information from filing cabinet.

Stored information can be called up at any instant. You don't need The key to all these elements is the programmability of SILICON call up your individual records by OFFICE. This allows you or your name. You can also search all Commodore Dealer to extend and records for particular information.

tailor SILICON OFFICE to your For example a Real Estate specific needs. The above features application may require a list of likely to need with SILICON further. can be combined into tasks that are houses with 4 bedrooms, a garage, between \$80,000 and \$100,000 In addition to the basic functions, SILICON OFFICE requires a dollars and close to public you can use trig functions, CBM 8096 computer with a performed to suit your specific between \$80,000 and \$100,000 Even if you bought individual transport. SILICON OFFICE maximum, minimum, exponent, choice of disk drives. programs that performed some of will automatically search all absolute, integer etc. the tasks of SILICON OFFICE, records and produce a report of all Calculations can be performed your requirements. you would still be missing the most the property meeting the selection using information from your files. fundamental thing of all; the criteria.

has between all its individual SILICON OFFICE database is \$100.00. the ability to search through six When you calculate, you have the Dealer.

files at one time to gain the information you require. For example you may wish to locate the stock records for all out-ofstock lines, search the order file for all orders relating to those items, and then look up in the Customer File the address of all affected clients and produce a letter

torun a small business or office can processing to filing to accounting, word processing functions, such as creation, storage, editing, and printing of text such as invoices,

simple with automatic re-formatting.

Standard letters and similar can be stored on diskette and recalled as desired. A major feature is the ability to merge calculated data, or selected information into the body of the text and have the formatted text print automatically.

choice of printer allows selection to suit budget and print quality, from low cost electronic typewriters to high speed dot

#### The Accounting. You can perform all the Once this information is sent, it

OFFICE.

For example, stock can be An important feature of the revalued by 11% on all items over



TREVOR BURTON PTY. LTD. are independent suppliers of MICRO COMPUTERS and supporting SOFTWARE PROGRAMS.

We are proud of our ability to support our motto "WE PROGRAM FOR YOUR PROFIT."

To date we have supplied small computer systems to some of Australia's largest as well as smallest progressive companies.

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BRIEF PROGRAM DESCRIPTION

DEBITORS AND INVENTORY CONTROL

● 928 Customers Records & 6,181 current Transaction Records for each data disk Up to 26 data disks
348 Product classifications by 116

sales classifications per disk Standard letters held. eg. payment

overdue, price list, instruction sheets. 3,448 INVENTORY records for each data disk with up to 9 inventory data 26 user definable transaction types.

WORD PROCESSING

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VISICALC

 The MATHEMATICAL equivalent of word processing. Multiple on-screen Calculations. Ideal for all types of Mathematical work.

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When Commodore released used as the HP-IB bus by their first PET computer in Hewlett-Packard to connect 1975, much critisism was peripherals to the host directed at the bus architecture computer. employed by the design Since the discovery of this engineers.

interactive link SILICON OFFICE

There was no S100 bus, no computers have found bit user port and the IEEE-

had been confined to instrumentation systems and

versatile bus, Commodore serial interfaces, only an eight themselves hooked up to many interesting interfacing suituations. Many scientific Up to this time the IEEE bus and industrial instruments support this bus and have the Commodore computer

connected as an inexpensive controller.

computer to talk to a range of and the host computer, or measuring devices to collect, between peripherals. Up to 12 memory space in the host log and compute data.

Commodore microcomputers have also successfully been connected to Hewlett-Packard peripherals, including their range of precision plotters.

The Australian CSIRO have plug-in using an extension used the Commodore micro-cable between the peripheral different peripherals can be 'daisy-chained' together on the IEEE bus, as each has an be recognised by the software in the host computer. With Commodore's

The advantage of the IEEE- intelligent peripheral concept, 488 bus, is that peripheral sjust the IEEE-488 bus means that many different peripherals can be plugged together without having to use valuable computer to support the peripherals. Standard commands, available in unique device address and can BASIC, are placed on the IEEE bus with the address of accordingly. the required peripheral and the peripheral will accept the

Hewlett-Packard 9872A Programmable Multicolour Plotter is plug compatable with the Commodore IEEE-488 bus.

commands and respond

Flexibility and plug compatability have been the

factors for the huge success of the IEEE-488 bus, used on Commodore microcomputers

## **CLEAN UP YOUR COMMODORE SYSTEM**

A new product recently announced, is the PETKIT cleaning system for the Commodore range of computers.

The kit is supplied in a compact, durable, vacuum-formed book specially designed to contain the items required for basic maintenance of a Commodore microcomputer system.

The products included in the kit

SAFECLENE

a tape-drive cleaning fluid witha safe solvent to clean all delicate surfaces such as tape heads.

FOAMCLENE

- an anti-static foam cleanser which lifts grease, dust and dirt from keyboards, plastic cases and covers and all surfaces including fabrics.
SAFEWIPES

- pads that are soft, lint-free, absorbant and excellent for cleaning all delicate external surfaces

SAFECLENS

anti-static screen wipes specially designed to clean VDU screens, reducing



the risk of errors and eye strain caused by imperfect visual SAFECLOTHS

- spun-bonded cleaning cloths that maybe required for a stronger, more uniform wiping material.

FLOPPICLENE

head cleaners. These are information on the PETkit recommended for cleaning all products. Commodore floppy disk units.

A special jacket takes a cleaning pad which is inserted into the drive, eliminating the risk of head recontamination and abrasion.

To ensure maximum reliability of your Commodore system, and to to ensure your investment is always clean and presentable, ask - flexible diskette and disk your Commodore Dealer for more

## COMMODORE USER GROUPS

Clubs have been established to allow Commodore enthusiasts to get together and discuss all aspects of the Commodore world.

Each club is independently run and has the full support of Commodore. Regular club meetings provide news, ideas, training, applications and programs relating to the Commodore product range. The user group is an information exchange between Commodore and the users.

Space is allocated in the Commodore Magazine for each club to contribute information, announcements, programs, etc. and members are encouraged to participate in the magazine.

#### **HOW DOES THE** CLUB COMMUNICATE?

Monthly meetings and regular special meetings allow Commodore Users to meet and exchange information. The meetings provide training, experience, problem solving and more.

#### WHERE CAN I **OBTAIN FURTHER INFORMATION?**

WESTERN AUSTRALIAN COMMODORE COMPUTER USERS ASSOCIATION P.O. BOX 38, INGLEWOOD. W.A. 6502. THE COMMODORE COMPUTER USERS ASSOCIATION G.P.O. BOX 4721, SYDNEY. N.S.W. 2001. SOUTH AUSTRALIAN COMMODORE USERS GROUP C/- PRESIDENT, 9 NEVILLE AVENUE, CLARENCE GARDENS. S.A. BRISBANE USERS GROUP P.O. BOX 127, STONES CORNER. QLD.

4120. ACT PET USER GROUP C/- PRESIDENT, 13 OLIVER STREET, LYNEHAM. A.C.T. 2602.

C/- Stephen Farrell 44 McCubbin Street BURWOOD. VICT. 3125.

## **NEW COMPUTER CENTER OPENS IN HOBART**

Harrington Streets.

A computer specialist, Mr Tony Smithies has been appointed to head the computer firm.

Quantum's managing director, Mr Rob MacFie, says his interest dates back to 1975 when he saw a prototype Apple computer at a

trade show in Chicago.

Mr MacFie said, "Since then there have been many changes in the microcomputer market, and the latest Commodore product, the VIC-20 will revolutionise the home-computer market."

Quantum will also support the CBM range of products, and Mr MacFie went on to say, "More and more Tasmanian businessman are coming to realise that the business computer, rather than being an object of mistique, is simply a readily understood aid to building efficiency and productivity, and lifting product.

Established Hobart consumer An important consideration is Tasmania cannot be a software electronics retailer, Quantum, the support placed on the base and Quantum is keenly has expanded into the field of programs to use with the interested in initiating a software computers by supporting the computer. In addition to the range manufacturing industry. range of Commodore computers. offered by Commodore, Quantum MacFie plans to pursue the Software and product support is are keen to expand the available subject with other businessman, provided from new showrooms at software on Commodore products. computer experts and the State the corner of Liverpool and "There is no reason why Government.



## **MAYDAY!**

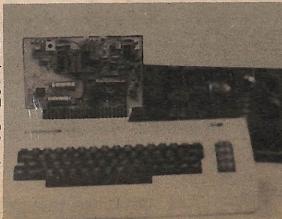
Hows this for a nice

The blurred object in the foreground is a Commodore VIC-20, the blurred object in the background is a standard radio transmitter/ receiver. The crystal clear object in the middle is an interface between the two which is being distributed within Australia by

CW Electronics, 416 Logan Rd, Stones Corner, Brisbane 4120 (Tel: (02) 397 0808).

The idea is that it allows you to use VIC's keyboard to send messages - automatically translating text to morse code or RTTY as desired.
"Vee kaan now efen send pro-

graams betveen ham radio ensusiasts!"



## **QUANTUM COMPUTERS**

We specialise in home, education and small business computers and the COMMODORE VIC-20 has now become our leading product. An inexpensive, fully expandable colour computer that can meet almost any of your needs. We are proud to be the local agent for the amazing Commodore VIC-20



Contact the manager:-MR JAMES POWEL-DAVIS for more information on how it can help you.

**Quantum Computers** 

## COMPUTER IS HIS 'VOICE'

Reprinted with kind permission of St. George and Sutherland Shire Leader.

Most people are overawed by computers, but for one brain-injured tenyear-old his computer is his link with family and friends.

Kevin Giardini, of Caringbah can share his joys and sorrows through a keyboard. When Kevin wants to "talk" to his family he types out the words on a television screen. Kevin, who nearly drowned eight years ago in a neighbor's swimming pool is luckier than most brain-injured children because only his speech and co-ordination are handicapped.

He is of above-average intelligence and has a reading ability two years better than other children of his age.

uses too-it enables Kevin to his own special way to his play games such as Space mother. Invaders.

Two hours a day Kevin attends Our Lady of Fatima Primary School, in Caringbah. He is able to walk to school now, much to the delight and surprise of his family and doctors.

and unsteady, but he is a hard but now he calls me when he

A much-loved child both in and outside his home, Kevin computer for Kevin to use at words and could not walk is often spoilt at school by the school. other children.

face portrays his love of life. his brother, Robert 13. Kevin made the interview an easy one and made me feel Robert to come home from volunteers.

welcome without saying a school so they can play The computer has other word, although he spoke in together.

difference in Kevin's life. "He can now work at his own pace and whenever he feels

like it," she said. I used to sit with him while Brain Injured Children. Kevin's movements are slow he was doing his homework,

She wants to buy another

There is no hostility or His good-looking, bright jealousy between Kevin and brain-injured children buy

Kevin can hardly wait for

As well as concentrating on expanding his mind and knowledge, Kevin still has to Mrs Gemma Giardini believes the computer has made a big do extensive exercises with the aid of his mother and 12 helpers.

The program is organised and assisted by the Friends of When Kevin started on the

program five years ago, he was almost helpless. He could only utter three

unaided. Friends help families of equipment for the exercise program and help train

Kevin's exercises start before 7 am and include creeping, crawling and breathing movements.

Mrs Giardini said: "When we first started exercising Kevin, it took three people to help him crawl -one to move his arms, one to move his legs and one to move his hips."He was vitually helpless, but he is a very bright child who wants to help himself. Foot Note:-

Kevin is using the Commodore VIC-20 and cassette player in his work. Compute CBM Systems of Caringbah loaned Mrs Giardini the computer to ascertain if Kevin would be able to use his limited facilities to type on the keyboard. The rest of the story speaks for itself.



**BUSINESS COMPUTER SYSTEM** 

THIS IS TRULY ONE OF THE BEST COMPUTER DEALS YET SEEN IN AUSTRALIA.

COMMODORE HAS REDUCED THEIR PRICES TO GIVE THE CONSUMER THE OPPORTUNITY OF A LIFETIME, TO OWN A FULL 4000 SYSTEM AT AN INCREDIBLE PRICE.

DON'T FORGET THAT OTHER BUSINESS SOFTWARE IS AVAILABLE TOO.

- COMMODORE 4032 CPU.
- COMMODORE 4040 DUAL DRIVE 5¼" — ½ Megabyte disk
   COMMODORE 4022P
- Dot Matrix 80 Col. Bi-directional printer.

  ALL CONNECTING LEADS
- and box 2500 sheets 8½" paper.
   VISICALC SOFTWARE PACKAGE







ompute **CBM SYSTEMS** 5 PRESIDENT AVE., CARINGBAH

@ 525 5022 Commodore Courier - Summer 1982 5

## COMMODORE AUSTRALIA - Rapid growth in a changing market

industry settles out of a have a Silicon Office in each hardware. boomtown atmosphere into department to handle administration a solid, publicly-accepted growth industry, many new companies are consolidating their heavyweight gear. Mainframe runs on methyl nitrate, only available -while some of the established computer giants lick their might object to using it for tasks such

In one short decade the silicon chip company's best salesmen." has single-handedly revolutionised business and society as we know it, and the revolution - as do all 8096 computer, with its ability to revolutions - has given the cross-index files and handle many bulldog's bone.

Given the silicon chip, a backyard right price - for just such a job. electronics wizard with a few clues programs, did not have the same to the party.

laughing all the way to the bank. without a lot of thought.

remarkable growth rate.

for the month.

ahead of schedule."

our small business systems."

The VIC-20 appeals to the electronic transactor

provide with them, including a suite The company presents a complete of locally-produced accounting packages specifically designed for the Australian market.'

"Powerful word-processing and database software, such as the recently-released Silicon Office program, has enlarged our market to cover not only the small business but also many large international corporations.

'We now have more than 100 selected dealers servicing the Australian market, with the Dick Smith chain also marketing the VIC-

"We recently took over responsibility for the entire South-East Asia-Pacific region, as well as for Australia.'

'By the end of this year we expect to be the largest supplier of microcomputers in Australia.'

"Already we are looking for larger premises - we now occupy the entire building in which we originally had one small office."

'Our dealer base is expanding so rapidly that our 1982-83 sales forecast is around \$15 million."

It was to be expected that microcomputer would make its mark in small business and the home. Offering relatively complex computer power in a form simple to use and understand, at a price that has dropped consistently until there are few budgets that could not afford a machine like the VIC-20.

At \$399, it is tailor-made for hobbyists and small businessman. What has caught some of the

microcomputer companies by surprise is the alacrity with which big companies have jumped on the micro bandwagon.

Big companies still need big computers to process their accounts and the likes of IBM and Honeywell write plenty of business. But big companies also have branches and secretaries, diaries and appointments,

departments and mailing lists.

Mr Shepherd said: "So where the company itself might have heavy mainframe requirements, the managing director's secretary might well have a simple micro like the Commodore 8032 to help her with wordprocessing, diary-keeping, and the many tasks of running a large office."

outside of the general requirements time is not cheap, and the company

Yet a program like the Silicon machines. Office running on the Commodore chihuahua a chance to steal the records simultaneously, would be eminently suitable - and at the the

could whip up and market his own massive mainframe computer capacity more used to the new technology, keep him within the Commodore microcomputer. The giants, already use a Silicon Office program for more informed on their own committed to heavy mainframe production ordering. The program matches the bills of material to the the accounts package I need to run on Whatever, it's a long way from flexibility, and were slower coming production schedules to ensure that this machine material is on hand when required."

It has been a time of rags-to-riches 
The first computers were about the stories, and now that the market is size of a small ballroom, and far more consolidating, as the micro-computer expensive. While technology has digs itself in firmly in business and the helped in reducing both size and cost, home alike, the survivors are no-one buys a mainframe even today

Prominent among those survivors is The next on the scene was the mini-Commodore International, now one computer. At a fraction of the cost of of the world's largest manufacturers a mainframe, it still produced of micro-computers. Commodore's relatively heavyweight capability. local subsidiary - Commodore Yet the firm that bought a mini had Australia - has also shown a still to justify it in terms of price and

With a staff of two in July 1980 and Then came the micro, at first little a small office in Artarmon furnished more than an advanced desk-top with makeshift furniture, the calculator. It expanded to take in company turned over about \$30,000 tasks like word-processing and file storage, then accounting Managing director, Mr Nigel invoicing. Gradually its capabilities Shepherd, said: "We forecast the have extended: more memory, more magic \$1 million month by the end of computing power, multi-user capability, this year, but we were nine months the ability to communicate to other computers.

"The strong trading is partly The range of micro-computer attributable to the release of the VIC- hardware available today is staggering. 20 \$399.00 colour computer, but we Commodore's products range from have also achieved record sales for the first machine the company sold in Australia - the PET, or personal hobbyist and educational markets to Commodore 9000 range of sophistithe extent that more than 1000 units cated, high-powered micro-computers were sold in the first three weeks' with capabilities undreamed-of 10 years ago.

"But small business systems such as The company has taken care with the Commodore 8000 series of two aspects of its business: first, all its computers, have also shown a machines have been provided with full software backup, and secondly, "This is largely due to the wide all its systems, apart from the VICrange of software we are able to 20, can be interfaced with each other.

There are few things more annoying than to buy a car and find that parts for which the company purchased and service are unavailable, or that it at three places in the country. Such to suit his particular requirements. things can happen easily in the as coordinating the bonus tours of the micro-computer world, where many individuals are designing their own

Likewise with software, the programming discettes or cassettes processor or accounts machine by telling the silicon chips what to do. It is no longer the machine that sells "For example, Unilever, who have the micro-computer. Customers, customer's every requirement, and requirements, are asking: "Can I get and however big he wants to get.

"I can see the day coming, and office

As the microcomputer "His departmental heads could well range of integrated, inter-relating soon," said Mr Shepherd, "when a customer won't just walk into the sees a machine that interests him."

"He will be more interested in the range of software packages available

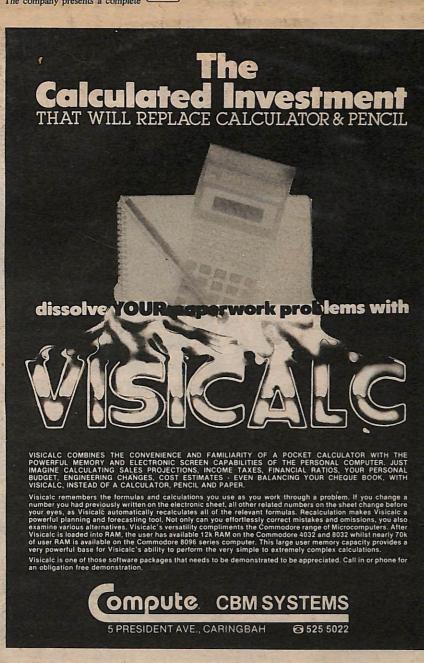
"It's software that will direct the growth of the micro industry, now that the mushrooming has stabilised."

"That's why we offer a full range of software to back our products, from that turn a lump of iron into a word- the simplest hobbyist computer right up to the complex business systems like the Silicon Office.'

"We want to be able to service our framework, whenever he wants to go

sitting on a packing crate in a bare





# **TECHNICAL**

SPECI		G				11 6	5
COMPUTER SPECIFICATIONS							
MODEL	VIC-20	64	4016 BASIC	4032 BASIC	8032 BASIC	8096 BASIC	SuperPET BASIC
Language Other Languages	BASIC NO	BASIC YES	NO NO	NO NO	YES	YES	YES
Colour	YES	YES	NO YES	NO YES	NO YES	NO YES	NO YES
Graphics Sprite Graphics	YES NO	YES YES	NO NO	NO	NO	NO	NO
High Resolution Upper/Lower Case Char.	YES YES	YES	Option	Option	Option	Option	Option
Columns	22	40	40	40	80	80	80
Lines Inbuilt Screen	22 NO	25 NO	22 YES	22 YES	22 YES	22 YES	YES YES
Connect to TV Green Phosphor Display	YES	YES	YES YES	YES	YES	YES	YES
User Memory (RAM)	3.5K	39K	16K	32K	32K	96K	96K
System ROM Expandable	20K YES	20K NO	18K YES	18K YES	18K YES	18K YES	36K YES
IEEE-488 Interface Option Option	YES	YES	YES	YES	YES	120	120
RS232 Interface Serial Bus	Option YES	YES	Option	Option	Option	Option	YES
User Port	YES	YES	YES	YES	YES	YES	YES
Games Port Memory Bus	YES	YES	NO YES	NO YES	NO YES	NO YES	NO YES
Plug-in Cartridges Peripheral Support	YES YES	YES	NO YES	NO YES	NO YES	NO YES	NO YES
Sound Generator	YES	YES	Option	Option	YES	YES	YES
Music Synthesiser	NO	YES	NO	NO	NO	NO	NO
Typewriter Keyboard Graphics on keys	YES YES	YES YES	YES	YES	YES NO	YES NO	YES NO
Cursor Control Function keys	YES YES	YES YES	YES NO	YES	YES NO	YES NO	YES
Numeric Keypad	NO	NO	YES	YES	YES	YES	YES
Processor	6502	6510	6502	6502	6502	6502	6502
Height (mm) Width (mm)	70 405	70 405	356 419	356 419	356 419	356 419	356 419
Depth (mm) Weight (Kg)	200	200 4.8	470 22.7	470 22.7	470 22.7	470 23.4	470 24.0
Voltage (VAC)	240	240	240	240	240	240	240
Frequency (Hz) Power (Watts)	50 25	50 45	50 120	50 120	50 120	50 130	50 140
Towar (Watta)	2.0	40	120	120	120	100	140
DISK UNIT SPECIFICATIONS							
MODEL	D9060	D9090	8250	8050	4040	2031	1540
DRIVES HEADS/DRIVE	1 4	1 6	2 2	2	2	1	1
INTERFACE	IEEE	IEEE	IEEE	IEEE	IEEE	IEEE	SERIAL
MEDIA*	Fixed	Fixed	DS,SD	SS,SD	SS,SD	SS,SD	SS,SD
STORAGE CAPACITY Unformatted	6.38Mb	9.57Mb					
Formatted	4.97Mb	7.46Mb	2.1 Mb	1.06Mb	348Kb	174Kb	174Kb
Sequential File Relative File	full disk		2.1Mb 1.04Mb	1.06Mb 182Kb	174Kb	174Kb	167Kb 168Kb
DISK FORMATS							
Cylinders(Tracks) Sectors/Cylinder	153 128	153 192	77	77	35	35	35
Sectors per track	32	32	23-29	23-29	17-21	17-21	17-21
Blocks Free	256 19442	256 29162	256 4166	256 2052	256 664	256 664	256 684
TRANSER RATE	5Mb/s	5Mb/s	40Kb/s	AUKPIO			
IEEE-488 Bus	1.2Kb/s	1.2Kb/s	1.2Kb/s	40Kb/s 1.2Kb/s	40Kb/s 1.2Kb/s	40Kb/s 1.2Kb/s	
ACCESS TIMES (milli-seconds)							
Track-to-track Average	3 153	3 153	3	30	30	30	
Head settling time	15	15	100	100	100	400	
Average Latency RPM	8.34 3600	8.34 3600	100 300	100 300	100 300	100 300	
File Interface (ALL MODELS): Shared memo							
PHYSICAL DIMENSIONS	140	440	104	104	104	444	-
Height (mm) Width (mm)	140 210	140 210	181 381	181 381	181 381	144 204	97 200
Depth (mm) Weight (Kgs.)	385 9.5	385 9.5	394 12.6	394 12.6	394 12.6	370 8.0	374 4.5
ELECTRICAL (ALL MODELS)	0.0	0.0	12.0	12.0	12.0	0.0	4.0
Voltage (VAC)	240	240	240	240	240	240	240

### PRINTER SPECIFICATIONS

SS Single Sided Floppy Diskette
DS Double sided Floppy Diskette
DD Double Density Floppy Diskette

Power (watts)

	PRINTER SPECIFICATIONS				
	MODEL	8023	4022	1515	8300
	Print Method	Dot Matrix	Dot Matrix	Dot Matrix	(Daisy Wheel
	Letter Quality	Pseudo	-	-	YES
	Character Matrix	5x8	5x8	5x7	Supplie (40)
	Characters	Upper/Lower	Upper/Lower	Upper/Lower	Upper/Lower
	Graphics	YES	YES	YES	NO
	Dot Addressable	YES	YES	YES	-
	Interface	IEEE	IEEE	Serial	IEEE
1	Print Formatting	YES	YES	NO	NO
	Expanded Print	YES	YES	YES	NO
	Reverse Print	YES	YES	YES	NO
	Bidirectional	YES	YES	NO	YES
	Logic Seek	YES	YES	NO	YES
	Char. Size (mm)	2.94x1.04	2.94x2.04	2.82x1.76	
	Print Speed	150cps	70cps	30cps	40cps
	Columns	136/250	80	80	132/158
	Character Spacing	10 cpi	10 cpi	12 cpi	10/12 cpi
	Linefeed Spacing	Prog.	Prog.	6/9 lpi	Prog.
	Paper Feed	Tractor	Tractor	Tractor	Tractor
	Paner Width	or Friction	-		or Friction
	Paper Width	5-15"	5-10"	4.5-8"	5-15"
	Copies	3	3	3	3
	Ribbon	Cartridge	Cartridge	Cassette	Cartridge
	Height (mm)	180	100	132	248
	Width (mm)	530	380	328	560
	Depth (mm)	380	320	172.5	510
	Weight (Kg)	14	9.2	2.5	36
	Voltage (VAC)	240	240	220-240	
	Frequency (Hz)	50	50		240
	May Deves (Matte)	50	30	50	50

100

200

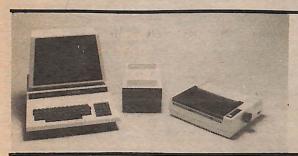
## SUGGESTED CONFIGURATIONS

(Prices subject to change without notice).

#### **Personal System**

VIC-20 Computer C2N Datasette Recorder VIC 1515 Graphic Printer 399.00 99.00 479.00 977.00





#### Professional/Educational System

CBM 4016 Computer CBM 2031 Single Disk Drive CBM 4022 Dot Matrix Printer PET to IEEE Cable IEEE to IEEE Cable IEEE to IEEE Cable

1,199.00 749.00 1,129.00 79.00 79.00 79.00

Economy business System (4000	series
CBM 4032 Computer	1,779.00
CBM 4040 Dual Disk Drive	1,779.00
CBM 4022 Dot Matrix Printer	1,129.00
PET to IEEE Cable	79.00
IEEE to IEEE Cable	79.00
IEEE to IEEE Cable	79.00
	4 924 00





#### Advanced Business System (8000 series)

CBM 8032 Computer	2,249.00
CBM 8050 Dual Disk Drive	2,399.00
CBM 8023P Dot Matrix Printer	1,709.00
PET to IEEE Cable	79.00
IEEE to IEEE Cable	79.00
IEEE to IEEE Cable	79.00
	6,594.00

designed for use with a seperate Featuring 256K bytes of memory

Existing Commodore peripherals series is software compatible with

Sixteen colours are available for text display or graphics, together the system at the same time,

with special sprite graphics for enabling optimization at the

system level.

**VERTICAL INTEGRATION** 

The impressive price/performance

shown by Commodore is a result

of a deliberate strategy of

Since LSI chips take up to two

In addition to the standard text

there is a high resolution display of

Two control ports are included

320 by 200 dots (pixels).

outstanding visual effects.

CBM 8032 Computer	2,249.00
CBM 8050 Dual Disk Drive	2,399.00
CBM 8023P Dot Matrix Printer	1,709.00
PET to IEEE Cable	79.00
IEEE to IEEE Cable	79.00
IEEE to IEEE Cable	79.00
	6,594.00

#### Advanced Word Processing/Business System

CBM 8032 Computer	2,249.00
CBM 4040 Dual Disk Drive	1,779.00
CBM 8300 Letter Quality Printer	3,000.00
PET to IEEE Cable	79.00
IEEE to IEEE Cable	79.00
IEEE to IEEE Cable	79.00
	7 005 00

#### Development Training System

SuperPET Computer	3,990.00
CBM 8050 Dual Disk Drive	2,399.00
PET to IEEE Cable	79.00
	646800

## **EXPLORE** COMMODORE

CW Electronics can offer a total world of Commodore - Professional and Business systems - Personal User support - Communications systems -

Service - Books etc. - Experienced **Professional Staff.** 

The VIC Centre Import, Distribution and Retail sales of VIC-20 orientated hardware and software.



40/80 COL.

VIC-20!!

- 40/80 Column Display (not colour)
- VIC and CBM Graphics Load all CBM/VIC Programs
- All Cursor control U/L Case
- Switchable form basic without losing
- No external power required

PRE-RELEASE OFFER \$353.00 (Tax & post included SAVING OF APPROX. \$26.00

PRICES AND SPECIFICATION COULD CHANGE WITHOUT NOTICE

the total package \$650 in one go ELECTRONICS VIC

416 Logan Rd Stones Corner, Brisbane P.O. Box 274, Sunnybank, Qld. 4109 (07) 397 0808 & 397 0888 Telex: AA 40811 in Sydney - The Microcomputer House, 116 Abercrombie St, Chippendale NSW

time. Management has copied the it the luxury of spending the Japanese strategy of being a low-marketing expenses necessary to of the few manufacturers providing cost producer, which should allow increase its market share.

Commodore will certainly be one a range of 'Solution Machines'

**PROGRAMS & SYSTEMS** 

"talk to the world"

\$399 total \$677

(a amateur radio special) NEW WORLD
TDK-20 and Morse interface

VIC CENTRE AFSK Modulator

2 x 6 Volt transformer

User port plug

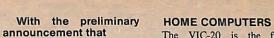
Free installation VIC-20 Computer

Purchase

\* SILICON OFFICE

WORDCRAFT EBS SYSTEMS \* GENERAL LEDGER \* STOCK CONTROL \* PHARMACY SYSTEM CASH BOOK

\* VISICALC



Commodore International Commodore product to address RF modulator. ended FY1982 with over \$320,000,000 in sales, the trend for steady increase over the past five years has been maintained.

The product introductions of the VIC-20 and the recently announced Commodore 64 have impressed many analysts who see Commodore quality video game player that can heading the microcomputer manufacturers with products that are and a music synthesizer. cost/performance leaders.

United States, as much as 75% of personal computer sales will retail under \$US500 within the next two MAX computers.

computer market will be the less 
The Commodore 64 will be the market where Commodore's top technology and management has good marketing price/performance leader.

machine have been rumoured, In addition to the current CBM which when released will dominate 8000 series of microcomputer, the low end of the personal Commodore will introduce next computer market. Commodore is year a new generation of aiming to introduce computers microcomputers. of computers.

**COMMODORE GROWTH** 

**AMAZES STOCK MARKET ANALYSTS** 

The VIC-20 is the first colour monitor or TV input via a the 'BX' series has a second product to address RF modulator.

The VIC-20 is the first colour monitor or TV input via a the 'BX' series has a second processor, a 16 bit 8088. The 'BX' series has a second processor, a 16 bit 8088. The 'BX' series has a second processor, a 16 bit 8088. The 'BX' series has a second processor, a 16 bit 8088. The 'BX' series has a second processor, a 16 bit 8088. The 'BX' series has a second processor, a 16 bit 8088. The 'BX' series has a second processor, a 16 bit 8088. The 'BX' series has a second processor, a 16 bit 8088. The 'BX' series has a second processor, a 16 bit 8088. The 'BX' series has a second processor, a 16 bit 8088. The 'BX' series has a second processor, a 16 bit 8088. The 'BX' series has a second processor, a 16 bit 8088. The 'BX' series has a second processor, a 16 bit 8088. The 'BX' series has a second processor has a secon the home computer market and the good reception has seen production will plug into the 'P' series the 'B' series but will also support volume increase rapidly from the computers via an IEEE-488 CP/M-86 programs. 50,000 units per month in March interface.

The MAX machine will be display of 40 columns by 25 lines, manufactured at a new facility in Hong Kong. This product is a high be expanded to a home computer

When both products are being Analysists predict that in the produced, annual production volume will be in the region of 1.2-2.0 million units of VIC-20 and or other peripherals as required.

## The low-end of the personal PERSONAL COMPUTERS

competitive segment over the next leader in this field. This is a new couple of years and is the type of product employing the latest

### Products such as the MAX BUSINESS COMPUTERS

under \$US100 in the near future The Commodore 'P' series is a with more features than current software compatible range of video game machines, plus the colour computers starting with programmability that is not 128,000 characters (128K) of currently available on those types user memory. These systems are



The Commodore 'B' series is a software compatabile range of professional computers starting with 128K of user memory. This series features an attached display and integral disk drives.

Like the 'P' series, the 'B' machines are also compatible with the full range of CBM peripherals, allowing them to be easily expanded as needs grow.

Advanced 16 bit professional computing will be catered for with the 'BX' series which is an enhanced version of the 'B' series.

## COMMODORE FINANCIAL HIGHLIGHTS

(02) 698 7866

	(000's ommittee	d except per sha	are amounts)			
YEAR ENDED JUNE 30	1983*	1982*	1981	1980	1979	1978
Net Sales	535,000	322,000	\$186,500	\$125,600	\$ 71,100	\$ 50,200
Gross Profit Margin	-	-	44.4%	40.3%	32.5%	30.5%
Net Profit Margin	-	-13.4%	12.9%	8.4%	6.8%	
Net Income	\$ 91,400	\$ 41,500	\$ 24,900	\$ 16,200	\$ 6,000	\$ 3,400
Shareholders' Equity			\$ 61,600	\$ 35,500	\$ 20,800	\$ 12,300
Earnings Per Share	\$ 5.50	\$ 4.00	\$ 2.42	\$ 1.56	\$ .62	\$ 1.08
Average Shares Outstanding	10,300	10,300	\$ 10,307	\$ 10,395	\$ 9,720	\$ 3,157
QUARTERLY EARNINGS PER SHARE	2227		1980-81	1979-80	1978-79	1977-78
September 30	10 20 1V	-	\$ .44	\$ .30	\$ .12	\$ .23
December 31	-	-	\$ .56	\$ .30	\$ .14	\$ .25
March 31			\$ .66	\$ .38	\$ .15	\$ .27
Tuna 20			\$ 76	e 59	\$ 21	6 33

\* Estimated values only





Some industry's have Logies or Grammies, Commodore has the 'Golden Floppy Award'

This year, the N.S.W. Marathon Championships had a new sponsor in the shape of one of the world's biggest computer companies, Commodore Computer.

The 1982 championship incorporated the Australian Defence Services Marathon Challenge and was run on the State's safest, and potentially fastest, marathon course through the Holsworthy army complex.

The first man and woman to finish both won an Air New Zealand return air fare to compete in the Auckland

Marathon in New Zealand.
All those who finished within the official time limit (five hours) were eligible for random draw prizes, which included two VIC-20 Colour Computers.

## **GOLDEN FLOPPY AWARD**

Nigel Shepherd said that Commodore's emergence as a sponsor of sport related to the increasing computerisation of

"Football teams and clubs all over the world are using our micro computers to plan their training, predict performance, and control finances," he said.

"Choice of a marathon as our first involvement seemed appropriate because it requires

both speed and endurance - just like a good computer!".

However, for celebrities such as Ita Buttrose, Noel Ferrier. Jonathon Coleman and Len Evans, the actual marathon race was run for them by 'proxy' runners.

Experienced runners were drawn by computer (CBM 8000 series of coursel), to randomly match celebrities who chose to 'compete' from the sideline.

The 'winner' of the celebrities race was Gordon Elliot who received the Golden Floppy Award.

The race was very successful with over 800 competitors. The results were processed on a CBM 8000 series computer, with a program aptly titled 'Marathon Manager', developed by Dirk



## THE COMMODORE COMPUTER

## NUMBER 1. FOR BUSINESS.

## IT COSTS LESS AND DOES MORE THAN COMPARABLE SYSTEMS.



#### COMPARE THE ALTERNATIVES AND YOU'LL SEE WHY COMMODORE IS THE COMPUTER TO BUY

	CBM 8032
Price: Under \$7,000.00	1.
Computer Memory (RAM + ROM): Total = 50K	1
80 Characters Per Line	1
Built-in Green Display Screen	1
Separate Numeric Keypad	1
Standard Upper & Lower Case Characters	1
514" Dual Disk Storage Capacity - 1,000,000 Characters	1
National & Local Service/Support	1
Over 250,000 Desk-Top Computers Sold World-Wide	1
Over 100 Software Packages	1
Over 23 Years in Technology	

Commodore is not only a world leader in technology, reliability and design, it's a solid corporation too. Already hard at work looking after your needs in the years ahead. Learn more about Commodore, the micro-computer you can depend on. Call or write for the name and location of your Commodore dealer nearest you.

For further information:-

## **Desktop Computer Systems**

10 Cowper St., Granville 2142 Ph: (02) 637 3062

## Cx commodore COMPUTER

## DESIGNING COMMODORE INTERFACES

the Commodore computers first came to Australia, MicroPro Design has been involved in the design and manufacture of specialized add-on equipment for these machines. Early develo-pments included an IEEE- (6502) based and will, on the initial 488 interface for the Diablo Word Processing printers and IEEE bus interfaces for RS232 and Centronics protocols. There have been a number of significant developments and enhancements since then, which have software as well as use on synchron-broadened the scope of the ous communications lines. Commodore computers business, scientific and leisure activities.

We currently supply many inter-faces, which have proved their reliability and are widely use

In particular, the RS232 and Centronics Printer Interfaces allow the Commodore PET/CBM computers to be employed economically with many printers using these standards. They provide on-board code conversion from PET CODE to standard ASCII if required and find applications where the Commodore printers are unable to perform the desired task. The interfaces were designed with economy and size in mind and they fit directly on the back of the Commodore, from which they derive their power. Most standard software can be used with these



#### IEEE-488-RS232 COMMUNICATIONS INTERFACE MPC8110

This interface is a self-contained unit housed in an attractive ABS plastic enclosure. It is mains powered



## COMMODORE

Put your VIC-20 'On The Air"

The Interface Your VIC-20 becomes a complete CW/RTTY/ASCII send and receive terminal with The Interface linking it to your transcaler.

it to your transceiever.

Software for the VIC-20 features split screen display, buffered keyboard, status display, and message ports.

Attach any Centronics compatable printer for hard copy. Software (HAMSOFT) is available in clip on

Cartidge.
The Interface \$299.00
HAMSOFT \$ 78
CW Electornics see our advt. page 7

for the IEEE-488 (GPIB) bus and due to the microprocessor logic RS232 interface standards. Indicators provided on the front of the unit are for diagnostic aids on internal self motion where possible. test and to give visual indication of the interface's current status.

The interface is microprocessor configuration, provide for buffered bi-directional communications between computers such as the CBM and devices using asynchronous RS232 at any of the industry standard rates. Future enhancements allow for protocol and code conversion

This unit is designed to replace the earlier unit pictured (Model 8100) which has proved itself in simple



## EPROM PROGRAMMER MPC 8301

This EPROM PROGRAMMER was designed specifically for use with the Commodore computers and provides features exceeding those of dedicated designs at a fraction of the cost. It can be used with the PET, CBM and VIC-20 models and can read or programme all currently available 1, 2, 4 and 8K byte EPROMs

(in 24 pin packages). The features available include:-

- **★ PROGRAMME AN EPROM** CPU BUFFER
- READ AN EPROM INTO CPU BUFFER
- CHECK IF EPROM IS **ERASED**
- PRINT BUFFER CONTENTS IN HEX
- SAVE/LOAD BUFFER TO DISC
- CHANGE/DISPLAY BUFFER CONTENTS ON

SCREEN All features of the programmer are controlled through MENU prompted commands on the computer screen. The software to perform the functions provided can be loaded from cassette and disc or be in an EPROM inserted in a spare slot in Further Information

#### IEEE-488-RICOH/DIABLO PRINTER INTERFACES

These microprocessor-based interfaces were designed to allow wordprocessing quality printers such as the Ricoh RP1600 and Diablo 1345/630 to be used with the Commodore computers. They provide all necessary functions required for use with word processing packages (eg. WORDCRAFT) and are also compatible with the business software supported by Commodore. Features such as auto- bi-

directional printing, proportional

which also enhances performance of the printers by optimizing any print

All interfaces fit inside their respective printers from which they

#### derive their operating power. RS232/CENTRONICS PRINTER INTERFACES MPC8101/8202

These interfaces are low-cost units designed to allow the Commodore CBM computers to use any of the wide variety of Centronics and RS232 compatible printers available in applications where the Commodore units are not suitable. The interfaces mount on the back of the CBM. plugging into the IEEE-488 bus connector and standing vertically against the rear panel. The IEEE bus is extended through the interface and presented on a PCB connector on the terface above the power cable. The RS232 or Centronics output connector is positioned above the first cassette port. (Note the Centronics interface comes complete with a two metre cable.)

The interfaces have full selectable addressing on the IEEE bus. The RS232 interface has selectable word length, parity and baud rates up to

#### BAR-CODE READER

The MicroPro Design Bar-Code Reader is based on a small hand-held wand which plugs into an unused cassette port on the Commodore.

Using software in EPROM inside the CBM, it is possible to read all standards bar-codes used for product numbering. These standards include the Australian APN (8 and 13 digit code), the European EAN and American UPC codes.

The software is designed so that applications programmes in the Commodore can easily input a scanned bar-code, or verify a manually entered number

### CBM MEMORY UPGRADE

This module is a small printed circuit board assembly designed to be plugged directly onto the memory expansion connector of the 8 and 16K Commodore computers. It allows these machines to be rapidly upgraded to the full 32K possible without modification of the CPU.

Power for the module is derived from the computer and all necessary cables are provided. Installation

Detailed information on all MicroPro Design products is available on request. Full operational specifications are given in extensive manuals provided with all equipment. This includes software notes and full schematics.

MicroPro Design will continue to develop equipment for use with the Commodore computers and has a committment to continue high standards in design and manufacture. We look forward to your enquiries regarding devices already in production and new or custom developments.



## MicroPro Design

Pty.Ltd.

## SPECIALISTS IN COMMODORE INTERFACES

O RICOH/DIABLO WORD PROCESSING PRINTER INTERFACES O IEEE-488 - RS232 COMMUNICATION

INTERFACES O CBM RS232/CENTRONICS PRINTER

**INTERFACES** 

O UNIVERSAL EPROM PROGRAMMER O BAR CODE READER O CBM MEMORY UPGRADE MODULE

We can provide off-the-shelf delivery, or custom make any Commodore interfacing to your individual

MICROPRO DESIGN PTY. LTD. SUITE 205/6 CLARKE STREET. CROWS NEST N.S.W. 2065 or P.O. BOX 153, NORTH SYDNEY N.S.W. 2060

## MOS TECHNOLOGY IS **COMMODORE'S 'EDGE'**

Chip manufacturer to develop new generation for micro maker

VALLEY FORGE, PA

- Back in the fall of 1976, before there was any microcomputer market to speak of, Commodore

International acquired MOS Technology to help its struggling calculator business. (MOS had designed the 6502 chip, which is found today in innumerable microcomputers, including models by Apple, Atari and Hewlett-Packard).

x "We were looking to build something more intelligent a personal computer [ around the 6502. We didn't know then what the market would be, but we deceided to find out," said Jack Tramiel, Commodore founder and chief executive officer

MOS Technology turned out to be a key part of Commodore's present and future plans for success, which are based on the idea of being a vertically integrated company.

Most other microcomputer manufacturers (two exceptions are Zilog and Intel) have to buy chips developed by other companies - often MOS point.

"About a year ago, it was Technology. systems would be designed goes off and begins designing over the entire aspect of the



of [Commodore] chips and essentially: the chip group the plastic. We have control

Technology - and then here at this facility," explained any special-purpose custom design a system from that Albert Charpentier, systems LSI (large-scale-integrated) design manager at MOS chip; the boards can be MOS plant is integrated designed simultaneously; and decided that the new generation We can take three paths, also we can begin to develop

design. That's our competitive edge," said Charpentier.

In fiscal 1981, MOS technology sold about 60% of its output to other manufacturers. That percentage is getting higher, according to Tom O'Donnell, a vicepresident at MOS Technology. Companies such as Apple don't buy their chips directly from MOS Technology, but they do buy from one of MOS's several licensed manufacturers, which in turn pays royalties to MOS for the design.

Today MOS Technology provides Commodore with electronic technology. "We have a systems-design group, which decides what new technologies are required to develop systems, and a totally self-sustaining semiconductor facility that designs all the Commodore products using an expensive array of computer-aided design systems. We do design analysis using computers and terminal interfacing with large mainframes outside the building. We make all of our masks, through which the wafers are processed, and we have a total wafer fabrication operahere," explained O'Donnell.

What finally leaves the ciruits, which then go to Japan or California for final assembly into computers.

There is also a systems/

#### **COMPUTER SYSTEMS DIVISION**

Manufacturing Facilities:
Santa Clara, California • Braunschweig, West Germany
Assembly Facilities:

Santa Clara, California • Braunschweig, West Germany • Tokyo, Japan (subcontractor)

Seven major U.S. Cities • Toronto, Canada • Slough, England • Neu Isenberg, West Germany • Basel, Switzerland • Horsens, Denmark • Breda, Holland • Oslo, Norway • Tokyo, Japan • Hong Kong • Sydney,

#### SEMICONDUCTOR COMPONENTS DIVISION

(19% of fiscal 1981 sales)

Manufacturing Facilities: MOS Technology, Valley Forge, Pennsylvania Manufacturing process: N-Channel silicon gate

Frontier Manufacturing, Costa Mesa, California Manufacturing processes: C-MOS metal gate and N-Channel silicon gate; within 12-18 months, C-MOS silicon gate

Optoelectronic Division, Dallas, Texas Manufacturing process: Liquid crystal displays (LCD's)

#### **CONSUMER PRODUCTS DIVISION**

(4% of fiscal 1981 sales)

Consumer Products Group, King of Prussia, Pennsylvania Commodore Business Machines (U.K.), Ltd., Slough, England

#### OFFICE EQUIPMENT DIVISION

(6% of fiscal 1981 sales)

Commodore Business Machines Ltd., Toronto, Canada

assembly facility in Santa cessors that will provide product line in the future. virtually all of its micro- Clara, California. A support lower-power, "equal or betterfacility in Costa Mesa, speed microprocessors" for of the corporation will double California, is working on a "use in hand-held applic-for the next forseeable few CMOS version of the 6502 ations"; this microprocessor years," said Charpentier.

and 6500 series of micropro- will be part of the company's

"The aggregate production

## **B.S. MICROCOMP** AND COMMODORE

A GREAT THREE YEAR SUCCESS STORY.

The excellent range of Commodore Microcomputers together with a wide selection of Software equals many happy customers.

B.S. MICROCOMP's expertise secures this formular. We specialise in Business Applications, supplying Systems to Educational Institutes, Government Departments, Small Businesses and Corporate Bodies. But we also do not forget the Personal User.

We import a wide range of Commodore associated products from the U.K. and U.S.A. Such "goodies" as Programmers' Toolkits, High-Resolution Graphics, Softbox CP/M Interfaces, DMS Data Base Software, Printout and VIC Computing Magazines, to name a few. Our aim is to please - if you have the right products plus the "know-how", we cannot really fail - CAN WE?

Do talk to experts about your Computer Requirements and guarantee yourself the right decision.



B.S. MICROCOMP PTY, LTD... 4th Floor. 561 Bourke Street, Melbourne, 3000. Tel: (03) 614 1433. 614 1551.



MICROCOMPUTER SYSTEMS DESIGNERS

## WHO'S THE TOY FAN? AGE GROUP OF BUYERS SURPRISE COMMODORE.

mechanical toys, the within the reach of most budgets, and the realisation that what started as a grim task has turned childhood hobby of into an almost limitless field of older men, is be- amusement, discovery and useful coming old hat, says leisure potential. the managing director on a Saturday morning," he said.
"Just look at the people buying Computers, Mr Nigel electronics or computer magazines. Shepherd.

Out go the planes and the train men. sets and in comes the latest in An interest in computers seemed high-technology toys: the home the only common denominator microcomputer.

conclusion after reviewing the boom. Perhaps, said Mr Shepherd, results of a questionaire sent out when the first traditional goals of with Commodore's newest low-price hobby computer, the VIC 20. had been achieved, perhaps a boat, hobbyists, but the survey gave hold dad at home more, the Commodore an opportunity to find obvious hobby, status activity or out more about their buyers.

Mr Shepherd said he was staggered by the results.

'We included an age-bracket most big businesses were going to question," he said "I suppose we computers." took it for granted that given the "I was the marketing manager games capabilities of the VIC, and our whole business was to be most buyers would fall into the 15- computerised. Most of the staff 21 age group.

What we found, in fact, was that with it. around 80 per cent of VIC buyers were aged between 30 and 60.

The microcomputer has really taken off as a leisure activity, far the first few weeks, with procedure above our expectations, and in an age group that is among the most common users for hard business

These are the buyers who would have been playing with crystal radios or train sets 30 years ago."

He puts the age-group interest factor down to three reasons: the determination to get on top of a new piece of technology that is little difficulty, he said. dramatically changing our lives,

Messing about with the discovery that the price is

"You can see it in any newsagent They are a real cross-section and many of them are older married

among the wide range of ages and Mr Shepherd came to this interests involved with the micro At \$399 it is definitely geared to and when the family was tending to time-filler was the microcomputer.
"I used to work at a firm during the mid-seventies," he said, "when

> "I was the marketing manager were going to have to learn to cope

## **ADAPTED**

You'd expect teething troubles for changes and the need for new ways of thinking.

"But the people who had been with the company longest and who held the most senior positions were the ones who had the most

The operators, and those who

Whatever their reasons for taking a in the 40-60 age machine home - group we are finding to impress the boss, a large sector of to learn more for happy were using the computer most, had work, as a status addicts." They were retrained and soon symbol or purely as

NIGEL Shepherd..." a hobby - there seems no doubt that computer

adapted to the new way of doing

"But the upper management, who were not working with it on a dayto-day basis, seemed to have a lot of trouble adjusting themselves to the new aspects of their life.

"If anything went wrong or the results were unusual, the computer got the blame.

"It immediately became evident that those who had shrug their shoulders and said to themselves, 'It's arrived. I'd better learn to live with it', coped best.

"Perhaps they were a little more the business market. aggressive in their approach. They got stuck in and beat it.

"Within weeks they were the people who used the computer with ease and speed, while those who had reacted a little more suspiciously were still taking hours over simple

Jane -

adapted to the computer so quickly," he said, "was that they taking a machine home - to that came their way.

dollars to go out and buy one of computer addicts.'

more about it.

"I think the people who reacted machines are the same type of machines are the same type of they go the more rewards they personality as many of the find." businessmen who are buying micros

There could be many reasons,

"One reason these people but I think attitude is important." "Whatever their reasons for

took every opportunity to use it impress the boss, to learn more for work, as a status symbol or purely "But where they were looking at as a hobby - there seems no doubt a \$30,00 computer in those days, that in the 40-60 age group we are now they just spent a few hundred finding a large sector of happy

'So many of their computers In doing so, they became more absorbed as they learned trade. But where they originally bought it to handle, say, debtors or Another way into this type of stock control, they say, 'Hey, I can computer use was directly through handle my correspondence on this'.

"Then they start doing word aggressively to understand their processing, costings - the deeper

"What has definitely opened the for small business application," Mr door is the fact that price has put computer power into the hands of so many people.'



Commodore Computers

# Commodere COMPUTERS

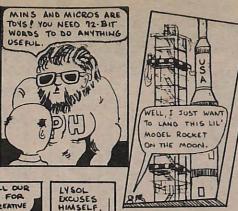


s. The solution machines.

EDUFMAN MEETS PSEUDO HERO

OUR STORY PSEUDO HERO SALESMAN FOR PLANETARY HERCULEAN COMPUTERS IS TALKING

TO AN UN-SUSPECTING H.S. PHYSICS TEACHER .



























WANT TOTRY TO MAKE A SOFT LANDING ON JUPITER ? VIC JUPITER LANDER IS NOW AVAILABLE IN CARTRIDGE TO PLUC INTO A STANDARD VIC-20 COMPUTER

ASK YOUR COMMODORE DEALER TO SEE JUPITER LANDER AND AND THE MANY OTHER CARTRIDGE GAMES NOW AVAILABLE GOOD LUCK !!

# **COMMODORE COMMUNI**

communications, with the tasks. For example:

**How VisiCalc** 

could make you another

\$100,000 this year...

What changes would it need in sales, costs, salaries, cash flow to have a

VisiCale will give you instant answers to all these questions. That's why

Now Commodore has a package that not only gives you the computer

Run your business options through your Commodore and VisiCalc

For only \$3499.00

it's the world's best-selling computer programme for business use. More than

world's best-seller, it also includes Australia's No 1 Microcomputer, the

All for \$3499.00! Offer ends August 31, 1982.

dramatic impact on your turnover and profit?

250,000 copies sold in two years!

Commodore 4000 System

One of the most exciting for MOdulator DEmodulator) the exchange, price of raw materials, areas of microcomputing, Commodore can now be used for economic indexes on a daily basis. is in the area of data an incredible variety of different Scientists and researches have to survey a very large amount of advances in technology Database access - Some people information through cross references opening new applications. due to their professional activity, 'about certain topics. Today this By connecting a Commodore have to keep in touch with information is stored in computers Computer to a MODEM (stands commodities such as stock as it is so bulky, expensive and

books. The number of databases is growing rapidly. There are databases in Australia called CSIRONET, provided by the CSIRO, or Beginning, a general prupose database available from Melbourne or via the OTC data communications system MIDAS, you can access virtually any computer database in the world. The topics covered by these computer database's are as wide ranging as Agriculture, Chemistry, Medicine, Criminolgy, Music World, Energy, Philosophy and many more.

One of the main advantages of using a Commodore Computer to provide access to one of these data bases is cost. The user is generally charged on the amount of information retrieved and the amount of time connected. Using the Commodore microcomputer you can retrieve the information you desire very quickly and store it in the computer where it can be Australia. reviewed at your leasure, thus reducing the chargeable time

Apart from using a Commodore In addition to using Commodore office, you could install in each business system which does all your accounting, word processing, and stock control etc. By using Modems and the Commodore communication software, it would be possible to transmit over your phone lines, all your accounting and stock information to Head asynchronous port, which can be Office for processing and report used at speeds up to 19.200 bits generation. It is even possible to per second, with full control of stop write a letter at one location using the Commodore Wordprocessing software and transmit the letter over the phone to another location connected to the Auspac packet where it can be printed out. A rival switching network as a X.28 for Australia Post?

The Commodore VIC-20 computer and modern configuration, there is the DRL communications is probably the cheapest terminal controller which is a multi-

quickly obsolete to be printed in for data communications now available in Australia. It represents the best value for money for people who are on a tight budget, yet still want to get into microcomputers the Australian and data communications. Microcomputer hobbists can now access data bases or communicate with each other and swap programs, games or files. One of the more exciting

advances in data communications

is Prestel. These massive public data bases have vast amounts of information for everyone, from the housewife to the businessman. They are very easy to use, just like an electronic magazine. They use your existing colour TV sets and your phone. In the UK, the Prestel service is run by the British Telecom and already has over 20,000 subscribers. There are Prestel adaptors for both the CBM and VIC range of microcomputers Currently there are several Prestel like systems being set up in

#### Advanced Communications

to talk to data bases, there are other microcomputers as simple terminals applications where it can be very communicating to data bases or to useful. If, for example, you were a each other, there are a variety of business man with more than one communication products which connect the Commodore to more branch office a Commodore advanced networks to provide terminal emulation and distributed data processing functions.

One device available, connects to the Commodore and allows it to be used as a teletype style terminal or as an intelligent terminal (depending on software). It has an RS232 bits, parity, wordlength, etc. Using this RS232 communication device the Commodore can also be compatable device.

For binary synchronous networks

different types of networks. The DRL controller is a soft loaded device that supports IBM 2780, 3780 batch protocols or IBM 3270 terminal protocols. The DRL controller provides the FORTRAN, COBOL PASCAL Commodore with full 3276 etc. and a very versatile set of interface between the Commodore BASIC language and the mainframe. This facility is a very useful one for distributed data processing applic-

Commodore in conjunction with SNA/SDLC controller, lets the Commodore SuperPET computer

protocol device that allows be connected to any SNA type Commodore microcomputers to communications network. This be connected to a variety of particular configuration is an incredibly effective solution for DDP type applications. The SuperPET supports "industry languages such as APL BASIC terminal emulation as well as an communication facilities, allowing the SuperPET to be used as eithe a terminal or as a front end processor to a mainframe (Host).

Commodore certainly have all the communications options covered. No matter who or what you want to the Systems Technology 3703 talk to, Commodore can provide a

Marie lives in Ryde; has two for artist or printer. small children at the local bookkeeper and couplers

secretary. magazines and other publications. Working from home 4016 microcomputer with audio cassette storage unit. number of text entry operators; skilled people who work their

own hours and from home. What Alvin Toffler calls the Electronic Cottege.

text is retyped into the the average job requires." Commodore from the raw "I believe this Commodo copy (original hand or typewritten sheets) by the operator who carefully proofreads the Pty Ltd who transfers the traditional method." data into their phototypesetter onphotographic paper ready

Text can also be sent over school; is an experienced the telephone via accoustic

The graphic characters on During school hours Marie the Commodore keyboard subcontracts text entry for are utilised by MBG as command, or formatting, "The Commodore is she operates a Commodore ideal for this type of work says Mervyn Beamish "because of its built in green Marie is typical of a growing screen, fast keyboard and additional graphic keys. A Commodore 4016, indeed any CBM machine, can carry out 90% of the formatting commands that our bigger The system is simple. The machine uses-far more than

"I believe this Commodore Courier is an example of the system at work - all text was supplied to us on Wordcraft copy and adds some format- Disks by Commodore themting commands. The disk or selves. I doubt if the job could cassette is then sent to have been completed on Mervyn Beamish Graphics time if we had used the

For more information contact which produces typset copy Merv. Beamish (02) 439 1827

## shows what effect each one would have. Don't play it by ear any more, Commodore VisiCalc will show you exactly what will happen. Before you Talk to us or your nearest Commodore dealer for the whole story. That extra \$100,000 could be only a phone call away. "VisiCalc: The smash hit of software' Time magazine "No office should be without VisiCalc" - Your Computer magazine

Cx commodore COMPUTER

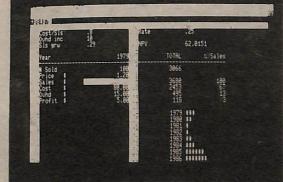
## WHAT IF.....YOU HAD VISICALC

VISICALC software displays a large electronic worksheet on the screen of your Commodore computer that replaces paper, pencil and calculator to automatically solve nearly all number problems.

Just type in labels, numbers and mathematical formulas and VISICALC instantly calculates the results. Then play "What if - change one variable and VISICALC automatically recalculates the entire problem so you can see the results on the screen immediately.

Recalculation makes VISICALC a powerful planning and forecasting tool. Not only can you effortlessly overall profit and make the at a later date and you can print all you can also examine various pricing. alternatives.

THE PARTY



correct mistakes and omissions, necessary adjustment to your or part of the sheet on a printer.

The many applications of

Once you have established the VISICALC include; cash flow For example, if your rental format for a particular application, analysis, production and inventory increases by 15% you can you can save the entire electronic levels, income statements, balance instantly see how it will effect your sheet on your diskette for retrieval sheets, job costing, budgets, office

calculating landed product costs pius many more.

In fact if you are doing any calculation by hand now, you can probably do it simpler with VISICALC.

CONFIGURATION

The package as supplied will work with the following Commodore computers;

CBM 4032 40 column computer with 32K user memory CBM 8032 80 column computer with 32K user memory

CBM 8096 80 column computer

with 96K user memory All Commodore disk drives and printers are supported by standard ASCII printers that are correctly interfaced.

# commodore



The CBM 8000 desk-top computer is an integrated, cost-effective, simple to use method to improve your business or professional operation. It is a tool you can use to manage information the way you want to ... when you want to.

The CBM 8000 desk-top computer will help manage your cash, run your books, control your inventory, process your words and make your business more profitable. All this can be obtained at a system cost that is surprisingly affordable. The CBM 8000 desk-top computer, as a management tool, delivers information to all levels of business and produces results previously attainable only with equipment many times more expensive. Whether your application is personal, professional or highly specialised and whether you are a small business or major corporation, the CBM 8000 desk-top computer can meet your needs.



FOR A LIMITED PERIOD ONLY INCLUDED IN THE SPECIAL PRICE IS THE CHOICE OF ANY TWO OF THE FOLLOWING SOFTWARE PACKAGES

General Ledger — Creditors — Debtors — Stock Control Word Processing — Data Management System — Electronic Cashbook

This package is available from:

## ompute CBM SYSTEMS

5 PRESIDENT AVE., CARINGBAH

## **MOTOR INDUSTRY ACCEPTS** COMMODORE

One of the exciting growth areas within the motor dealer industry, is the existance of specialist Finance and Insurance consultants to advise prospective motorvehicle purchases of the advantages or disadvantages of finance verses cash in todays money market, or in the area of insurance, where the client can get the best protection for the right price.

During the last few years, the task for these specialist consultants has been more

trends of the future. After RAM. At that time, no such and in many cases, the not have been possible if we much searching of the microcomputer existed. The consumer has been saved did not select the Commodore microcomputer



Mr Graham O'Neill demonstrates Compute's F&I system to prospective clients. Note the revolving screen on the computer, thus allowing the user full control over the keyboard to change the calculations demonstrated.

are a division of Compute preparing. Another factor that guidelines required. CBM Systems, have been greatly concerned Compute

involved in this particular type was how to keep the system Commodore computers are one of the most versatile F&I of consultancy work for cost to a realistic value when used by Motor Dealers programs available on the several years. In mid 1979, considering the application throughout the industry. Many Australian market" Compute realised that the and the marketability of the customers have remarked Mr O'Neill concluded by F&I industry needed some product. The amount of about the professional service saying, "But we must state, form of assistance if it was program required to perform available from motor dealers that our design techniques and going to cater to the changing the task was a massive 94K of who use the computer system, success in the industry would industry, use and cost of a disk drive many thousands of dollars. 4000 series system. The Compute decided that to could not be warranted. Compute have reflected upon Commodore product has achieve their aims of providing Realising Compute had a their success in this field many certainly lived up to its a realistic, presentable and problem, they put to work their times and are always glad of reputation for reliability and serviceable sales aid to the designers and produced a their decision to use the performance". motor industry, the Commodore special EPROM card that fits Commodore microcomputer.

consuming as interest rates perform within the guidelines holding the program in General Manager of Compute keep going up and tax laws demanded. To ensure the best permanent memory, ready for F&I Systems remarked, continually change. The simp- possible use and marketability access at any time by the "Several people have tried to licity of their work has been of the F&I system, Compute computer. This design concept tackle this specialist market gradually eroded, especially in designed a unique method of was unique and has allowed with various brands of the case of the businessman rotating the screen of the Compute to be recognised computers". who wishes to know whether computer 110 degrees either throughout Australia as leaders "Our success lies in the fact or not he should pay cash or if side of the centre, thus in this specialist market. that we are specialist in the he should purchase on a lease allowing the customer to be Security of Compute's program industry and therefore know or hire-purchase agreement. involved in the calculations was no longer a problem and how the motor dealer, the Compute F&I Systems, who that the consultant was price was controlled within the customer and the consultant

## TAYLORS COLLEGE

TAYLORS COLLEGE. A Melbourne based Senior Secondary School, has purchased 5 Commodore microcomputers for classroom use. The computers are being used to give students practical experience of programming and computer aided learning at year 11 and 12 level.

Taylors also have a Commodore 3000 series computer system complete with a disk drive and printer which is used for administrative tasks and for more advanced students in the Computing Science course.

With the additional computing



capacity now available, Taylors Computer Programming courto the general public. have undertaken evening ses in BASIC which are open Mr Robert Read, Principal of laboratory for instruction.

Taylors College, said that the school purchased Commodore because the units offered compact powerful portable computing facilities for a reasonable price. Mr Read added "the machines are so reliable and rugged, that we have not had a machine break down since their installation over 8 months ago. I dont know of any other equipment being used in schools today which has this record of reliability".

Photograph shows the Commodore micro-computers being used in the classroom

## COMMODORE **ACCOUNTING** TRAINING **MANUALS**

Recently released, the

Published in book format in more detailed reporting. gives methods of batching and dore Accounting software, controlling data for entry into these manuals are ideal for the Commodore computer.

Volume 1 covers the Commodore Accoun- Commodore Stock and Debtors ting manuals provide a Ledgers and Volume 2 covers reference manual for the Commodore Creditors the Commodore Accou- and General Ledgers. Examples nting systems and a and procedures are given for detailed training manual. integrating the ledgers for

two volumes, these manuals At the back of each manual, a provide detailed accountancy section shows with the use of excercises in the use of the flow charts, how to organise Commodore Accounting sys- work flow and data input for a tems. Comprehensive working concise and logical approach examples of a company's to computerised accounting. trading is used, and the manual Combined with the Commo-

> students in accountancy using a computerised system to learn all about modern day accounting.

> Ideal for training new or relief operators, or just using as a reference source, the Commodore Accountancy manuals are now available from your Commodore Dealer.

## **NEW PRODUCT** REDUCES CARPET WEAR

the full chair mobility that present and transmitted from Anchor-Stat allows and incr- one person to another and to eases the comfort of using a other objects. The human Commodore computer at a body can develop and transmit standard desk. Gone are the levels of static electricity in days when a track is worn into excess of 20,000 volts without the carpet by an operators harm. Levels of 3,000 volts chair moving around the would pass completely unnotcomputer. Total carpet protect iced by humans, but cause is now provided with Anchor- malfunctions when transmitted

styled to enhance the office ment. with a 1 year warranty against data on a floppy diskette or chipping or cracking.

especially designed to remove equipment. electro-static buildup from

Computer Operators need Static electricity is constantly to microsensitive elements of Anchor-Stat is elegantly computers and similar equip-

decor, being made from a To prevent the possibility of 100% superior quality vinyl static discharge ruining the interupting the computer's STATIC CONTROL processing, Anchor-Stat will Anchor-Stat comes complete discharge the person when with a 3 meter flex for earth they step onto the mat, before wiring. The product is they touch the electronic

An essential item for every around microcomputers and office, Anchor-Stat not only similar electronic office equip- gives carpet protection, but protection from static discharge.



## EXPLORE A COMMODORE **PETCLOCK**

(clock/calender)

Plugs directly into the user computer. It displays on the screen day, month, year in which ever order you require; can be accessed into other programs and need no power supply, a lithium battery is mounted internally, and will power the clock for 10 years even with the computer turned off.?

\$152.00 **CW Electronics** see our advert.page 7

and time 4000 series computer would inside the computer, thus As Graham O'Neill, the

feels. Because of this exper-Today over 160 of these ience we were able to produce



## Chor-Stat Standard weight CHAIRMAT and STAND-ON MAT

The new STATIC-CONTROL MAT with a 3 metre flex for earth wiring. Colour - Black. ANCHOR STAT is made from superior quality vinyl with conductive materials and has specific application to remove electro-static build-up from around mini/micro computers, word processors and similar electronic office equipment. ANCHOR-STAT is available with, or without, the 100's of small anchors required to keep the mat firmly in place on carpet. ANCHOR-STAT is placed under the operator's chair or wherever an operator may be standing next to the equipment

## 3 SIZES AVAILABLE, with ANCHORS:

Large size – 1200x1500mmRectangular.....\$229.90 (incl. Tax)

Available from your Commodore Dealer or contact

## HERITAGE TRADING COMPANY

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Electronic Business Systems are the Small Company with the right ideas, and because we're small we give personal service to our customers.

We market computer systems all over the world including the USA and Canada.

Flexible Systems which are designed to suit your Company, your stationery and

Our dealers throughout Australia would be proud to show you any of the EBS Professional Systems. There's one in our range just for you.

These are some of our Professional Systems

Debtors, Stock Control, Creditors and General Ledger — Can be tailored to varying individual needs and requirements. Flexible and Cost Efficient.

Public Accountants Package - From data entry to balance sheet with full printed reports. 6 means of data entry including comprehensive bank statement entry. Totally flexible chart of accounts to suit individual client needs. Design your own report style. 2 levels of consolidation.

Transport Accounting Package - Designed for the small to medium operator. Easy to operate, reasonable price. From single entry from docket book, details of all records are automatically updated to invoice statements.

Vic Cashbook - For the Vic Commodore and double up for data capture for Public Accountants Package. Provides up to 50 Columns of distribution of income and expenses.

Debtors Data Capture for Vic 20 — Make the Vic 20 more than a 'toy' — a really useful work tool at a very economical price. Allows small business people to control their own debtors accounting and produce statements without the high

WordPro Plus Series - A Family of word processors. EBS are the Australian Distributor for this world marketed product. Simple to use word processing with the power and capability only found in dedicated word processors costing thousands more.

InfoPro — User oriented Information Management System. Use for mailing lists, employee records, electronic filing systems. Merges with WordPro Plus to create hundreds or thousands of personalised letters.

Power — Programming Utility which makes writing programs easier. A powerful utility with features not available in other programming tool kits. eg Scrolling power allows you to list a program and scroll vertically without relisting and automatic line renumbering.



If you're in the market for any EBS Systems, call your local EBS Software Dealer, or

> Suite 4, 118 Macquarie Street, DUBBO. PHONE (068) 82 8611; Telex DOTLX 63651.

electronic business systems

## EBS WORLD LEADERS IN COMMODORE SOFTWARE

Electronic Business Systems are a Dubbo based computer software company, who believe that if a market dess not come to you, then you must go to DEBTORS & the market.

Originally an office equipment retailer, EBS has STOCK become one of the leaders in writing flexible, easy CONTROL to understand systems for Commodore equipment sold both in Australia and to the world.

The company could see the large market in software package with features Australia for more specialised computer programs and performance previously than were currently available, but customised available only on minicomprograms were in most cases beyond the reach, puters in the \$15,000 and up financially, of small businesses.

The company is owned by Barry Barnes and his wife Margaret who recently decieied that their the Commodore hardware, products could be sold successfully in overseas which is low cost, it offers a markets.

They commenced exporting computer programs fully integrated Debtors and from the mid western NSW city of Dubbo to USA, Stock Control System at a Canada and New Zealand.

"We decided to export our programs to the afford. overseas markets in order to offset the high cost developing our software", Mr Barnes said.

After some months of ground work EBS commenced exporting their products into the USA, probably the most competitive in the world.

Over 3000 individual systems were sold into the USA market during this initial period.

The two program types sold in this market were the EBS Accounts Receivable System and the EBS Inventory System.

Meanwhile in the Australian market, EBS were developing new products to meet the increasing demand for a wide variety of customers.

To date, EBS have developed such programs as:

# **EBS**

A very powerful integrated price range.

When this system is run on comprehensive and workable price small businesses can

The capacity of the system is as follows:

- 928 customer records and 6181 current transaction dealers. records for each data
- 116 salesperson distributions and 348 product

- \* 3448 stock records for each stock data disk.
- ★ Up to 9 stock data disks.
- ★ 26 user definable transaction types.
- \* The reports which the system produces includes customer invoices, letters to customers chosen by amount and ageing, customer lists in detail and \* Display of the total summary form, stocktake wn09sheets, total stock position report, customer statements, packaging slips, bank deposit slips, address many more.

The hardware required for the EBS Debtors and Stock Control System is readily available from Commodore

## **EBS** Up to 26 ledgers available. CREDITORS SYSTEM

descriptions for each ledger. reduce the running cost of ation keyed into the VIC-20 required to train an operator. contact Barry Barnes, Suite 4, owed to vendors in order to computer at a later date.

- - cash requirements.

## VIC-20 **CAPTURE SYSTEM**



The EBS Transport System The system is described as also at the end of the month user-friendly, and any entry prints invoice statements, can be displayed on the files (summary information ment reports and sub-printed at the same time. contractor settlement reports.

gives summaries of reports screen within seconds, and to sub-contractors, customer the total ledger can be file, and in other carrier lists, monthly sub-depot settle-displayed, or displayed and

## **WORDPRO PLUS**

TRANSPORT

This system fills the accounting needs of small transport operators and

parcel delivery companies. It allows a single entry from

a docket to enter all files required, therefore cutting down on bookwork. The system maintains records for customers, depots, other carriers and either

employee drivers or sub-

One entry gives the

★ Entry into the customer file, transaction file (holds each docket), depot sum-

mary (summary of inform-

ation supplied by the sub-

depot), Sub-Contractors

by other carriers).

following

contractors.

information:

operator the

SYSTEM

The Wordpro Plus word processing systems include software programs designed specifically for Commodore Computers.

There are five levels of programs available, ranging from sophistocated to basic text editing range, each has a particular application, but all have a large capacity for editing, subbing and writing. Over 2000 installations of the Wordpro

systems have so far been sold world wide. EBS were recently appointed as the exclusive Australian Distributor for Professional Software Inc. who are the world wide distributors of WordPro.

EBS are constantly upgrading their programs and offering a wider range of product types to the Australian consumers and the world markets.



make payments promptly relations with them.

goods returned for credit, efficient. bulk supply discounts, onpromotional price has been a later date. quoted, but normal price is businesses.

Another of the many client. important features in the system, is that it allows the records with name, address, company to design their own phone, etc as well as invoices, statements and other salepersons details, product documents to suit their descriptions and other informstationary - their own invoice ation. Invoices credit notes, layout - and it is fully cash receipts, sales tax and EBS flexible.

Other features in the system be inserted into the system.

- \* Creation of remittance
- advices.
- of all accounts.
- \* Listing of suppliers.
- monies owed within seconds.
- own format.

# **EBS**

inexpensive VIC-20 computer system of accounting. This package is designed to input base, with the inform- minimum of instruction time

It streamlines the task of and maintain good credit data collection as all the information can be collected The system offers many at the spot where it is features such as a check on generated, but it is still cost

The customer inserts the the-spot negotiated discounts information into the VIC-20 for goods received damaged at his home, office or farm or incorrectly supplied, and and then hands over the tape the occasion when a special to his Commodore Bureau at

All the information the charged. These are only a computer requires is contained few of the features in the on the cassette, which after system available to small the Bureau has finished with it, can be returned to the

You can construct customer values of distribution can also

The EBS Debtors Data LEDGER Forecasts for your future Capture System is simple to operate, and does not require SYSTEM a major capital outlay.

## A report showing ageing EBS PUBLIC ACCOUNTANTS **PACKAGE**

This is one of the newer EBS their own reporting format. systems offered in Australia.

★ Cheque writing to your easy menu form and offers all lower-priced systems including users a flexible, fully controll- the following: labels, aged trial balance, \* It also provides a wide able accountancy package. \* Account maintenance, daily

The Public Accountant Package is low cost and offers reduced labour costs in the DATA preparation of clients accounts resulting in increased productivity.

The EBS package offers up to 1500 accounts, up to 4500

to be used as an information It is simple to use with only a system:

DATA ENTRY Payments, Bank Deposits,

Journal Entry, Bank Statement, Cash Book and VIC Data Capture.

REPORTS - Posting Summary, Trial Balance, Chart of Accounts, Transaction Listing, List of unallocated accounts, full financial reports including trading accounts, livestock trading accounts profit and loss accounts, livestock trading accounts, profit and loss accounts, balance sheets and assets register and depreciation schedule.

CONSOLIDATION . Individual segments of business operations can be fully reported both individually and as a whole.

# GENERAL

This system allows up to 1000 general ledger accounts and 4500 transactions.

The flexibility of the system allows for simple and complex charts of accountS and it allows the operators to define

It offers a wide variety of This system is written in an features not normally found in

> posting listings, cheques, receipts, ledger journals, monthly transaction lists, trial balance, charts of accounts listing, hardcopy and account enquiry.

The system is flexible and This is a unique system transaction records, and the does not require intensive which allows the small and system supports double entry training to allow the operator to become efficient in the use of the system.

For further information 10 standard letters can be small businesses and to keep computer and fed into a Below is a summary of the 118 Macquarie Street, Dubbo. filed for each program an accurate record of amounts larger Commodore disk based functions and operation of the N.S.W. Phone: (068) 82 8611.

## DESKTOP SOLUTIONS

HOBART'S SPECIALIST COMMODORE DEALER

See us for your business requirements.

- **★**Silicon Office
- **★**VisiCalc
- ★ Home and Education



## **WORDCRAFT 80**

Commodore CBM WORDCRAFT 80

is a complete word processing system. It gives you virtually all the text creation and editing capabilities you will need at a Superscripts and Subscripts price thousands of dollars less than you would expect to pay.

WORDCRAFT 80 is versatile, producing reports, memos, proposals, correspondance, mailing lists, precedent documents easily and accurately. Regardless how you use it, WORDCRAFT 80 assures the highest quality finished

copy. Commodore's professional 80column wide display shows text exactly as it will be printed. Changes appear on your display screen as you make them, so revisions and formatting are easy and fast

There is a selection of printers available to suit your requirements and budget, from high speed dotmatrix printers to low cost electronic typewriters.

### **FEATURES**

- ★ Page layouts of up to 117 characters wide by 98 lines in length.
- ★ Screen displays finished format of document with no word wrap-arounds
- ★ Full typewriter keyboard with dual function keys for text editing and manipulation.
- ★ 5 status lines on the screen show position on page, left and right margins, tab settings, page number, name and date of document, disk file name and number of characters free.

**PASCAL** 

popular computer

Designed exclusively for \* System automatically keeps detailed index of documents filed on diskette.

> \* Diskettes can be removed and inserted without losing text in memory.

Half Line Movement for

This feature is available on most letter quality printers and Decimal Alignment allows printing of formula etc.

 $(X^4+Y_2)$   $H_2SO_4$   $A9_{16}$  $15*Z(12+X^3)$ Tabs and Indentation

Certain types of text require frequent changes in indentation including multiple indentation. a) General

1. Financing a) Personal capital \* bank account \* stocks and bonds b) Outside capital

Automatic Centering This is done automatically by WORDCRAFT 80 inserting the text in the center of the left and right

Line Spacing and Pitch

Both can be selected by the operator to suit a variety of Standard Letters printed formats. However the printer used may restrict the full implementation of this feature.

Right Justification and Proportional Spacing

When printing text, these options can be selected depending on the type of printer used.

Deletion by Character, Word or Paragraph

Commodore CBM

computers with 32K

languages. It has become space. The system can be operated UCSD Pascal was developed at

a global standard as a first as a memory based system with the University of San Diego by

programming language the editor and compiler co-resident Kenneth Bowles. The system was

for university computer or as a disk based system. The implemented around a p-machine

science students and system implements all of the stand-achieved popularity with ard Pascal statements and data easily transferred to any micro-

microcomputer users as it types with extensions to take computer by rewriting the offers a powerful program- advantage of the Commodore p-machine. The UCSD p-system

computers.

Text can be deleted by simple keyboard commands and when blocks of text are deleted, the area is highlighted Incorporate External Data for confirmation before deletion.

## **HOBART COMPANY** SUPPORTS COMMODORE

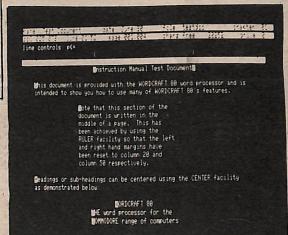
dealers, and they are proving that the

Commodore computer is Manager of Desktop Solutions, business applications.

customers have included one of the variety of businesses." engineering and manufacturing facility.

DESKTOP SOLUTIONS, of All these cutomers have 96K Hobart, are one of Commodore systems with either Commodore's newest dealers, and they are VISICALC. Two of them also use WORDCRAFT 80.

suitable for a wide range of Mr Tony Smithies, commented "We have found SILICON Since their opening in May, their OFFICE applicable to a wide state's largest dairy manufacturers, customers like it because it can be the state headquarters of Bankcard used in so many different areas of for one of Australia's largest their business, whilst VISICALC banking groups, a State Government gives them a very powerful Marketing Authority, and a small management planning and control



Columns of figures can be aligned automatically. 554.23

1,113.80 4.77 85.2201

Word or Text Emphasis Highlighting can be performed by undersore or by overprinting and can be selected automatically by a simple keyboard command.

Precedent Document

Documents can be created by Search and Replace recalling pre-typed text in random order from precedent files. This allows proposals and documents to be created. inserting standard paragraphs Margin Changes automatically and without having to retype standard text.

Letters can be created which have variable information automatically inserted from previously stored files. This allows individual presentation of a letter without having to

type each letter. Multiple Screen Configuration

Pascal are available for chaining, keyboard and clock

More than one screen can be connected together to share the disk drive and printer. This allows documents and inform- Block Movement of Text ation to be transfered between operators and reduces the installation cost.

Information from other soft-

support, error trapping and an

assembly language interface. The

TCL Pascal development system

Dealer for the 3032, 4032 and

8032 CBM systems in 4040 and

8050 disk formats

ware packages can be read into WORDCRAFT 80. For example, financial data from VISICALC can be inserted into a report produced with WORDCRAFT 80.

Printing Option

Pages can be printed by singlesheet or with continuous stationery. Documents can be printed in background mode allowing the screen to be used for entering information at the same time

A character string can be searched for within the chapter in memory and replaced with another string of text.

The left and right margin can be changed within the body of text allowing format changes which automatically adjust previously entered text. In addition the left margin can be changed on the printer at any

Headers and Trailers

SofTech.

is available from your Commodore is possibly the most powerfull pro-

These can be printed on each page with automatic page numbering and date of revision, even in book fashion (alternate left and right pages).

Text can be moved between pages or anywhere in the document with simple keyboard commands.

UCSD Pascal Version IV has

just been released for the Commodore 8096 computer. This

gramming environment available

for Commodore computers sup-

porting all of standard Pascal

together with concurrent processes

and a macro-assembler. The

Commodore 8096 implementation

supports the IEEE bus, a 32K

virtual disk in the top 32K of

system memory and both Commodore and ASCII printers.

COMMODORE dealer or the COMMODORE INFORMAT-

ION CENTRE for more inform-

ation about the UCSD p-System.

Contact your local

## COMAL COMman Algorithmic Language

5 PRESIDENT AVE., CARINGBAH

THAT JOINS ALL OFFICE FUNCTIONS

it all togeth

on Office package comprises of three integrated elements: a sophisticated word processor, a flexible database int system and an option for inter computer communications — all in one memory resident program.

■8023 DOT MATRIX/PSEUDO PRINTER ■COMMODORE CBM 8032 COMPUTER
■8050 DISC DRIVE UNIT ■ 64K ADD-ON MEMORY BOARD (TOTAL 96K RAM)
■THE SILICON OFFICE PROGRAM MASTER DISC ■TWO SECTIONAL A4 MANUALS
This package is available from:

THIS BUSINESS PACKAGE IS NOW AVAILABLE AND WILL COMPRISE

Ompute CBM SYSTEMS

The programming language COMAL was defined by Borge Christensen and Benedict Loefstedt in 1974. COMAL was designed as an extension of BASIC to facilitate teaching structured programming to non-expert ELSE programmers, combining the simplicity of BASIC with the algorithmic structure of Pascal. The Danish based COMAL working group released a COMAL-80 Nucleus specification for the language in 1979 which has become the standard for all implementations of COMAL.

COMAL has replaced BASIC as the first programming language in COMMODORE CBM Danish schools and has prompted a vigorous debate amoungst english computer educators about on the merits of BASIC as a first programming language. COMAL make BASIC unsuitable as a domain worldwide

EDIT, DEL, AUTO, RENUM schools has ensured support for INFORMATION CENTRE.

and indented listing of program compared to BASIC. Procedures illustrate the strength of COMAL with full parameter passing.

IF <expression> THEN <statements>

CASE <expression> WHEN <expressionsA> <statementsA>

ENDIF

WHEN <expressionsB> <statementsB> OTHERWISE <statements> **ENDCASE** 

COMAL

Commodore has supported the implementation of COMAL-80 for Commodore CBM computers by Mogens Kjaer in Denmark. users argue that the uncontrolled This implementation, COMAL-use of the 'GOTO' statement by 80 v00.11, contains the COMALnovice programmers and the lack 80 Nucleus with extensions and of adequate control structures has been released into the public

language to teach programming. In Australia a COMAL package COMAL is a three pass is available from all Commodore interpreter that maintains the Dealers for the 4032 and 8032 interactive mode, dynamic editing computers in 4040 and 8050 disk and easy to use I/O statements of formats. It includes COMAL, BASIC, with adequate control many example programs and a editing commands include LIST, Commodore computers in english COMMODORE

code. The following structures can use local or global variables

WHILE <expression> DO **ENDWHILE** 

REPEAT <statements> OF UNTIL <expression>

PROC procedure name> <statements> ENDPROC procedure name>

COMAL. Several disks of COMAL software and extended versions of COMAL, including a version for the 8096 and a cassette based 4032 version are available

from user groups. Ellis Horwood have released two COMAL textbooks, Roy Atherton's introductory textbook (Structured Programming with COMAL) and Borge Christenson's textbook with student guides (Beginning COMAL), that are suitable for use as introductory programming texts in secondary schools.

Systems programmers who are interested in working with the structures and facilities to promote copy of the COMAL-80 survey, COMAL source or system a structured approach to program-detailing all COMAL commands. documentation and the COMAL-The availability of the COMAL 80 Nucleus definition should The COMAL environment source and the widespread use of contact the Software Manger at

#### ming environment usually computer. These include hexa- is one of the wonders of the microfound in large computers. decimal constants, direct access to computer world and has continued Two implementations of memory and I/O ports, program to be developed and extended by

**ADVANCED SCREEN** 

Pascal is a high level TCL PASCAL

computer language defined DEVELOPMENT SYSTEM by Niklaus Wirth in the The TCL Pascal Development

early seventies that has System is an implementation of

become one of the most standard Pascal for Commodore

screen editing.

EDITING

control keys which move the keystrokes.

One of the most popular features of all Commodore computers is the advanced dition, there is an INSERT and DELETE key, which, when the cursor is positioned, allow the text to be opened up or reduced All keyboards have cursor according to the number of

cursor in the required direction. In One of the main applications is in

When an error occurs, the cursor is key pressed. The line is positioned to the mistake and the correction made by overtyping or RETYPING is required. using the Insert/Delete key. The line is automatically accepted when the RETURN key is

No special editor is required to can be scrolled up and down, lines correct lines. In fact this feature on deleted and inserted and parts of all Commodore machines makes the line erased to and from the the duplication of lines easy. If the cursor position. same line of instructions is to be All these editing features are the line number is edited for the be easy.

the editing of BASIC programs. new line value and the RETURN

The CBM 8000 series also has functions such as scrolling windows with programmable top and bottom window corners. Text

repeated elsewhere in the program, available in direct mode. Life can



AUSTRALIA'S largest personal computer Software distributors.

National distributors and manufacturers of Software products to micro computer dealers.

## COMMODORE VIC SOFTWARE

now available through your local VIC-20 Dealer **IMAGINEERING** (02) 358 3011

Commodore Courier - Summer 1982 15

#### CASH REGISTER TERMINAL **ANNOUNCED**

H.B.E. have announced the release of their data capture Cash Register. Designated the Model 6006, it is based on the highly successful Commodore 4032 computer.

The system uses the very flexible BASIC program language of the CBM 4032, to create a program which may be tailored to the users individual needs. Data is captured on CBM compatible cassettes for subsequent processing through a full scale Commodore system. This processing can include automatic posting to debtors accounts, stock updates and sales

analysis recording.
The compact 6006 Cash Register is self contained and plug compatible to the CBM 4032, using the standard IEEE port, user port and either cassette port. Power supply is inbuilt, and the unit has a seperable 240 V plug. Automatic cash drawer opening is provided for under program control, and a "drawer open" test is available. The cash drawer is of metal construction, with large standard plastic drawer insert. Data is collected on the integral C2N cassette unit, and may be

formatted to the users requirements. Customer ticket printing is performed on a standard 57mm x 57mm tally roll by the inbuilt

Hopwoods are marketing the 6006 Data Register as a complete unit (including 4032 computer), or as an 'add-on' to an existing system. Price for the complete unit (including 4032) is \$3,595.00 including tax. Included in this price is a 'skeleton' program which may be used as is, or altered by any CBM dealer.

## VIC 1540 DISK DRIVE

Connected to the VIC-20 via the serial port, the VIC 1540 provides economical floppy diskette storage. The diskettes are compatabile with the CBM 2031 and CBM 4040 diskettes to allow the interchange of programs and data between the various computers in the Commodore range

STORAGE	
Total capacity	174848 bytes per diskette
Sequential	168656 bytes per diskette
Relative*	167132 bytes per diskette
The Part of the Control of the Contr	65535 records per file
Directory entries	144 per diskette
Sectors per track	17 to 21
Bytes per sector	256
Tracks	35
Blocks	683 (644 blocks free)
IC's:	our (our blocks free)
6502	microprocessor
6522(2)	I/O, interval timers
Buffer	
2114(4)	2K RAM
PHYSICAL:	
Dimensions	
Height	07
Width	97 mm
Depth	200 mm
	374 mm
ELECTRICAL	IV:
Power requirements	ALTERNATION OF THE PARTY OF THE
Voltage	240 VAC
Frequency	50 Hz
Power	25 Watts
MEDIA:	

\* Although VIC-1540 is designed with a capability to handle relative files, it cannot be used with the current version of VIC-20

## VIC DATA CASSETTE

Standard audio cassette tapes can be used with the Data Cassette recorder due to the high reliability and the recording method employed with this unit.

Programs and data can be stored on cassette and programming is very simply with Commodore BASIC. Features such as motor on/off control and key switch sensing, allow the user much control over this cassette

The Data Cassette plugs into the cassette port of the VIC-20 computer and is supplied with all necessary

## **VIC 1010 MEMORY EXPANSION**

This unit plugs into the memory expansion bus at the rear of the VIC-20 computer. Six slots are provided to take up to six cartridges such as memory expansion, Programmers Aid, various

Power is supplied to the VIC 1010 by a mains cable and no other accessories are required to connect to the VIC-20 computer.

**SPECIFICATIONS** 

Diskettes

Input Voltage Power Temperature Humidity Dimensions Depth:

5.05 VDC, 7A 0-40 degrees C 40-85% 235mm (Body 187mm, Edge 48mm) Width: 397mm Height: 53mm

220-240 VAC 50 Hz

Standard mini 54", single sided, single density

Weight 1.66Kg

## "Why buy just a video game when you can get a full colour computer for this price."

A computer like this would have been science fiction a few years ago. Now it's a reality. It's the Commodore VIC-20, a full-fledged, expandable colour computer that costs little more than video games.

Everybody loves video games and the VIC-20 has some of the best. But the Commodore VIC-20 can also help the kids with their homework and mum with her budgeting. Dad can even take the light, portable VIC-20 to the office for financial and business applications.

And Commodore has many more applications

on the way.

### With Full Capability For:

- Education programs
- Recreational programs
- Personal computing
- Includes Microsoft
- Full-size typewriter-style keyboard
- Easy to follow instruction manual Memory expansion to 32K RAM



computing. It has a full computer keyboard even a small

child can operate. It plays music, has exciting graphics and lets you create pictures. It even tells you when you've made a mistake and how to correct it. The VIC-20 can take your children from pre-school through post-graduate studies. Why get just another game that could end up in the closet? Get an honest-to-goodness computer for just \$399. Get the Commodore VIC-20.

Learn more about Commodore, the micro-computer you can depend on. Call or write for the name and location of your Commodore dealer nearest you.

The Commodore Information Centre,
3 Campbell St., Artarmon NSW 2064. Phone: 437 6296.

Ccommodore COMPUTER

MLVL1460a

## **VIC 1515 PRINTER**

This low cost printer connects to the VIC-20 serial port with a cable supplied with the uni

Sp	ecifications	poor man a custo supplied with the time.
1.		
	Print method	. Impact dot matrix print (uni-hamr
		method)
	Character Matrix	
	Characters	. upper/lower case characters, numerals symbols, a
		PET graphic characters
		. Dot addressible. 7 vertical dots per column, max 4
		columns.
	Character codes	
	Character size	Height: 7 dats (2.82 mm)
		Width: 5 dots (1.76 mm)
	Print speed	. 30 characters/sec (left to right, uni-directional)
	Max. number of columns	. 80 columns
	Character spacing	. 12 characters/inch
	Linefeed spacing	6 lines/inch Character made
		9 lines/inch Graphic mode
	Linefeed speed	5 linefaeds/sec Character mode
		7.5 linefeeds/sec Graphic mode
	Paper feed	Din food
	Paper Width	45 to 8 inches accentable
	Multiple copies	Original plus 2 copies
	Inked ribbon	. Single colour, inked roller built-in cassette type
	External dimensions	177 5D v 328W v 132 H mm
	Weight	Approximately 2.5 kg
2.	Operating Environment	. ripproximately 2.5 ag
-	Power requirements	220 24011 50 11
	Power requirements	. 220 – 240V, 50 Hz
	Power consumption	
	Tommorotus	0.5 watts (idling)
	Temperature	. 5-40 degrees C
	Humidity	. 20% - 80% (no condensation)

## VIC SOFTWARE

There is a vast library of VIC software available from various sources. Your Commodore Dealer will be able to advise you of the programs available. Supplied by Commodore are the following programs:

CODE NO	DESCRIPTION	RETAIL
TEACH YOUR	SELF PROGRAMMING SERIES	

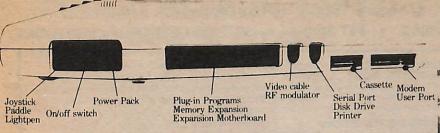
This 5-part series of tapes and manuals provides a self-teaching course in computer programming, from introductory BASIC to 6502 Machine Language Programming.

VL 101 Introduction to Computing 29.95 Sample programs in book and on tape making this an interesting introduction for the non-computerist. Stresses "computing", not "programming. Introduction to BASIC Programming **VL 102** 29.95 A gently but thorough introduction to BASIC programming. Excellent first

book for any new computerist. RECREATIONAL GAMES ON CARTRIDGE VIC 1901 VIC AVENGER 39.95 It's an invasion of space intruders and you're the VIC" Avenger," Space action for arcade enthusiasts. VIC 1902 VIC STAR BATTLE 39.96 An exciting multi-directional "Avenger" style game - watch for the supprise mass attack! VIC 1904 39.95 Colourful slot machine game works just like the real thing! Great music VIC 1905 JELLY MONSTER 39.95 Quick reactions needed in a maze where jelly monsters try to eat you before you eat them! Similar to the popular game 'Packman'. VIC SUPER ALIEN VIC 1906 39.95 You're trapped in a maze and your only defense is the "alien buster" Can you capture the aliens before they zap you? **VIC 1907** 39.95 Pilot your "Jupiter Lander" through the treacherous crevices of a mysterious planet. Variable rocket thrust, anti-gravity, horizontal VIC 1908 DRAW POKER 39.95 Casino-style poker recreates the real thing! Superb animation and sound effects add to the run, mystery and luck. VIC 1909 ROAD RACE Authentic night driving simulation provides thrills, chills and .... spills? An unusual computer challenge. RAT RACE 39.95

VIC 1910 reactions. VIC 1919 SARGON CHESS 39.95 Play chess with the VIC-20 computer at various skill levels to suit COMPUTER PROGRAMS ON TAPE The following prerecorded programs are designed for use with the Commodore Datasette Tape Recorder. A Recreation Program Pack A (Contains all six

programs listed below) Car Chase - Fast-paced road action VIC 21 – Casino-style blackjack
Blue meanies from Outer Space – Space game
Biorhythm/Compatibility – Compare biorhythms 14.00 14.00 14.00 Spacemath - Math improvement grades 1-6 14.00 Slither/Super Slither - dexterity game 14.00 A Home Calculation Program Pack A (Contains all six programs listed below) (April-May)
Personal Finance I – Home budget VT 107 75.00 14.00 Personal Finance II - Home budget 14.00 VIC Typewriter - Word processor for home use 14.00 Expense Calender - Income, expenses, appointments Loan & Morgage Calculator - Decision-making aid 14.00 Home Inventory - Home belongings list. 14.00 VT 164 Programmable Character Set/Gamegraphics Editor Let the VIC user 25.00 create up to 64 programmable characters and use them in BASIC programs. The Editor takes only one-half kilobyte of program space, works with tape, disk and printer



## **VIC20 Colour Computer**

## **Specifications**

#### PROGRAMMING FEATURES

6502A microprocessor.
Up to 88 characters per line with multiple statements per line.
Programmable clock.
9-digit floating point arithmetic.
True random number generator.
BASIC Interpreter available after powering on.
High resolution multicolour graphics.

## INPUT/OUTPUT

8 bit parallel port.
Serial output port.
Games for Joystick, Paddle and Lightpen.
Memory Expansion port.
Cassette port.
Video and audio output port.
RS232C interface available.

KEYBOARD

62-key typewriter style keyboard with graphics capabilities.
4 function keys with eight programmable functions. Colours are directly addressable from the keyboard. Cursor control keys and text edit keys standard. Two control keys to control 64 graphics characters. Repeat key function on space har, insert delete and cursor control keys.

Other keys can be programmed to repeat.

Composite, PAL colour standard, video output. Connects directly to TV monitor or RF modulator. RF modulator provides dual television channel signal.

22 characters by 23 lines.
Upper and lower case characters.
128 ASCII characters plus 128 graphics characters.
Programmable characters.
High resolution.
Maximum resolution 176 by 184 pixels (32, 384 in total.)

Reverse character display for highlighting. 8×8 character matrix for each character.

## COLOURS

3 character colours, 8 boarder colours, 16 screen colours, 16 orrection available from program keys is; black, white, red, cyan, purple, green, blue, yellow

SOUND

3 Tone generators for music Each generator gives 3 octaves.
White noise generator for music and sound effects.
Reproduction is through TV speaker or external amplifier.

MEMORY

RAM (Random Access Memory) 5K bytes (expandable to 32K bytes) ROM (Read Only Memory) 20K bytes (expandable with plug-in cartridges)

ABS	ASC	ATN	CHRS	CLOSE
CLR	CMD	CONT	COS	DATA
DEF FN	DIM	END	EXP	FNX
FOR NEXT	FRE	GET#	GET	GOSUB RETURN
COTO	IF THEN	IF GO	INPUT#	INPUT
INT	LEFTS	LEN	LET	LIST
LOAD	LOG	MIDS	NEW	ON GOSUB
ON GOTO	OPEN	PEEK	POKE	POS
PRINT	PRINT#	READ	REM	RESTORE
RIGHTS	RND	RUN	SAVE	SIN
SGN	SPC	SQR	STATUS	
STR\$	SYS	TAR	TAN	TIME
TIMES	USR	VAL	VERIFY	WAIT
•		10000	1	•
	436			

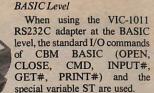
#### POWER REQUIREMENTS

Volts : 240 VAC Cycles: 50 Hz Watts : 25 W

PHYSICAL SIZE

Height: 70 mm (2½ inches) Width: 405 mm (16 inches) Depth: 200 mm (8 inches) Shipping Weight: 4.2kg (9½lbs) Shipping Volume: 580×260×110mms (23×10¼×4½inches)

VIC CARTRIDGES



Also, it can be linked with machine language programs for more sophistocated communications and the further expansion of its operating range

Bit/Byte Handler RS232C bit/byte level handler operates under the control of VIA (Versatile Interface Adapter), MPS6522 device timers and interrupts. It executes the RS232C protocol while the execution of the BASIC and machine language

programs are in progress. A detailed booklet is supplied with the cartridge to provide information on setting up the cartridge and how to program the VIC-20 to use the RS232C



PROGRAMMERS AID

This cartridge helps new and The VIC-1011 RS232C adapter experienced programmers write, has the following two operation edit, cruch and debug BASIC programs.

This cartridge adds more than 20 VIC instruction vocabulary and features of the VIC-20 computer. expansion unit.

the VIC's programmable function

If you are an experienced programmer, you already know how helpful it it to automatically number and renumber program lines, delete and insert segments, view program lines as they run, jump to commands or character strings and use the VIC special function keys to increase your programming power.

If you are beginning programming, the Programmers Aid cartridge will make it easier to write programs, understand how they work, and find and correct errors.



#### SUPER EXPANDER

This cartridge adds an entirely new set of colour, graphics, plotting, music and function key commands to the VIC vocabulary and adds 3K extra memory to load and run larger programs.

Graphic shapes can be plotted, colours 'painted' on the screen, music written and much much

The commands and functions work just like BASIC commands. In addition, most of the new commands are pre-assigned to the special function keys.

A valuable cartridge for those

AIC-III

MACHINE LANGUAGE MONITOR When the VIC-20 is turned on, the computer is in 'READY' mode and will accept instructions to run a BASIC program.

BASIC text is converted by the interpreter into machine code instructions which the microprocessor can respond to. If programs are written directly in machine code, faster running speeds will be

Detailed instructions on machine language programming can be found in the VIC-20 Programmers Reference Guide.
The VIC MON cartridge also

allows the user to construct 6502 machine code programs and includes a one line assembler/ disassembler.

#### **MEMORY EXPANSION**

The VIC-20's user memory can be simple expanded by plugging in one of the memory cartridges

The cartridges are available in 3K, 8K and 16K segments and can be configured to work together special editing commands to the who want to develop all the special when using the VIC 1010

## PROGRAMMERS REFERENCE GUIDE

Computer deserves a

that gives you more information as well as experienced programmers. to utilise the many features of the about the VIC-20 computer than

Four sections cover the most VIC-20 computer, such as;

The VIC-20 Friendly any other source. This guide was areas of interest: BASIC program-The VIC-20 PROGRAMMER'S gramming staff and is designed to programming graphics and sound. REFERENCE GUIDE is a book be used by first-time computerists Many ideas help the programmer

compiled from the experience of ming, Machine Language program-Commodore's international proming, Input/output interfacing and

outdated. Interfacing is explained to from your Commodore Dealer. allow computer expansion. -

INTERFACING

a modem.

The VIC-1011 RS232C

ADAPTER is available in two

VIC-1011A TERMINAL TYPE

- VIC-1011B CURRENT LOOP

user port of the VIC-20 personal

machine language level.

Bit/Byte handler of

BASIC commands with exam-

ple programs on how they

A laymans overview to

machine level programming,

The Kernal is explained to

not become

1) BASIC level,

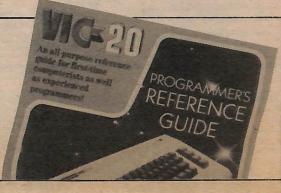
to get started.

today will

Complete dictionary including \* Graphics, colour and sound are all explained including the unique 'multi-colour' mode.

> POKE's will be discovered that were not previously known and the memory maps will show you places you never

ensure that programs written If you have the VIC-20 then you will find the Programmers Reference Guide a must. Available



## COMPUTE SYSTEMS - Supporting a range of Commodore products

One of the more successful Commodore Dealers in NSW and industrial aspects of micro computer school is a Company called Compute computers. To handle the various opened. Compute's short term object CBM Systems, who are skilled areas that Compute is is to assist in the much needed based in the southern centre involved in, specialist consultants education of the prospective Sydney, Caringbah. Compute provide system support, sales and service to individual sales and their various vertical markets.

having previously being involved in the mini computer market. The activities. senior partners in the Company are With C for sales and marketing, and Graham Nutt who looks after the technical and programming side of the business. The partners are generally known as the two "Graham's" and at times is quite confusing when enquiries just ask for Graham.

The Graham's present their business in a very professional manner and are well respected by fellow dealers and clients for their integrity and professional services. Service. Compute's continued growth products caught a few of the that in a majority of cases, the first To support this reputation, Compute in these areas would be indicative of manufactures and importers by market area and possible part of the recently opened what must be, one of the best looking micro computer showrooms of the Commodore computer range in Australia. As Graham O'Neill stated "The object of opening such a showroom was to allow the prospective purchaser the opportunity to touch and use micro computers in a quiet and relaxing atmosphere without the hassles of sales staff hanging around and pestering the client for a quick sale." Mr O'Neill continued "We have found that their are a lot of semi and professional business persons who like to be treated accordingly. We believe in sitting down with the customer and discussing with the client firstly his needs and problems, then working out and offering a solution. Today in the micro sale industry, too many sale orientated people offer the solution first without identifying the exact needs and unfortunately create many unhappy computers users."

This determination by Compute to understand the needs of the client has been one of the many reasons for their success. Part of Compute's

ounting, finance, insurance and team for Compute's where

their engineering staff at an early stage of their involvement with Commodore. Armed with such knowledge, Compute tackled the technical markets and are now highly O'Neill summarised by saying "We represented in the Universities, have over the last two years seen the Departments. Such areas of sales power and potential of microcomputers involvement require good support into the Australian market place. In both technically and in professional many cases, the demand on various their Companies ability to meet the surprise. The industry has gone demands of the professional micro through its introduction stage and it computer market.

commercial micro computer expansion effect of the micro either in his/her

work is involved in the commercial into the education market, a special are engaged to provide qualified computer user. Class sizes at the professional services in such areas as school are limited to a maximum of engineering, communications, acc- twelve students per course. This is to allow each student the opportunity of systems design. Altogether Compute having his/her own computer for Compute have had wide experience have seven such specialist consultants "hands on" experience during the in the micro computer industry and together form a very strong sales lectures as well as receiving tuition required. activities. supported by Compute's programming With Compute's vertical market staff and due to the quality and work, a lot of design and technical success of the school, booking's are development was undertaken by now required to be at least two months in advance

Direction

Where does Compute see the micro computer industry going? Mr O'Neill summarised by saying "We CSIRO and Government Defence real growth and introduction of the will be over the next two to five years To assist the domestic and that the consumer will really see the



A brief illustration of Compute's air conditioned, spacious showroom displaying the full range of Commodore products and accessories.

work place or in their personnel living environment. As far As marketing is concerned, we see the micro industry splitting into two, possibly three, distinct areas. Firstly, the very agressive and competitive consumer market where computers will cost anything from \$50.00 to possibly \$1,000.00. Secondly, the bottome half of the commercial or business market, where the purchaser knows what he wants and basically is only interested in buying brown boxes, naturally at the right price, plus specific software packages that are already available to satisfy specific applications. This buyer will require limited after sales support. The third market area will always be around. That is the buyer who wants a computer facility but requires specialist advice and expertise to assist in locating the needs and then offering a suitable solution. Continued support to this type of buyer will always be required.

We can see that in the near future, second market will be catered for by the large retailers like Myers, Grace Bros etc. The second market area and to a certain degree part of the third area will be supported by the micro dealer who will generally only be able to offer support on the premises. The majority of the third market will be catered for by micro dealer specialists, who have an "on road" sales support service. Because of Compute's expertise, we can only see ourselves staying in the last market area. Why get caught up and involved with the large retailers in trying to compete for the same consumer dollar. Compute will stick to what it knows best. That is professional marketing of business systems, where we can offer a service and backup support that very few dealers could compete with."

A very interesting perspective by Graham on the micro computer market, and no doubt will ensure that Compute remains one of Australia's leading Commodore Computer

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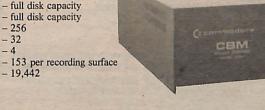
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SuperPET COMPUTER SP9000  COMMODORE PERIPHERAL	Enhanced CBM 8032 with additional 6809 microprocessor, total 134K memory including 96K RAM. Includes Waterloo interpreters; microBASIC, microAPL, microPascal, microCOBOL, microFORTRAN and 6809 Assembler.	3,990.00	VIC 1515	PET/CBM systems.  VIC Graphic Printer Economical dot matrix printer makes paper copies of BASIC programs, letters, business data, and graphic displays. Connects directly to the VIC, prints all characters including letters, numbers and graphics. Prints 80 columns wide, 30	479.00
Disk Drives	.a.			characters per second. Reliable tractor feed mechanism. Accepts sprocketed 8- inch roll or sheet paper.	
CBM 2031 SINGLE DISK	Single drive intelligent 5.25" disk system. Total 170Kbytes (DOS 2.6)	749.00	VIC 1010	VIC 1010 Expansion Module Lets you plug in up to 6 separate Memory Expansion Programs and Interface	199.00
CBM 4040 DUAL DISK	Dual drive intelligent 5.25" mini-floppy disk system. Total 340Kbytes (DOS 2.1)	1,779.00	SPECIAL CARTRIDGES	Cartridges.	
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IEEE-IEEE	Designed to connect more than one peripheral to any other peripheral.	79.00		executes, pause to edit. Special KEY command lets programmers redefine function keys as BASIC commands, subroutines or new commands.	
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