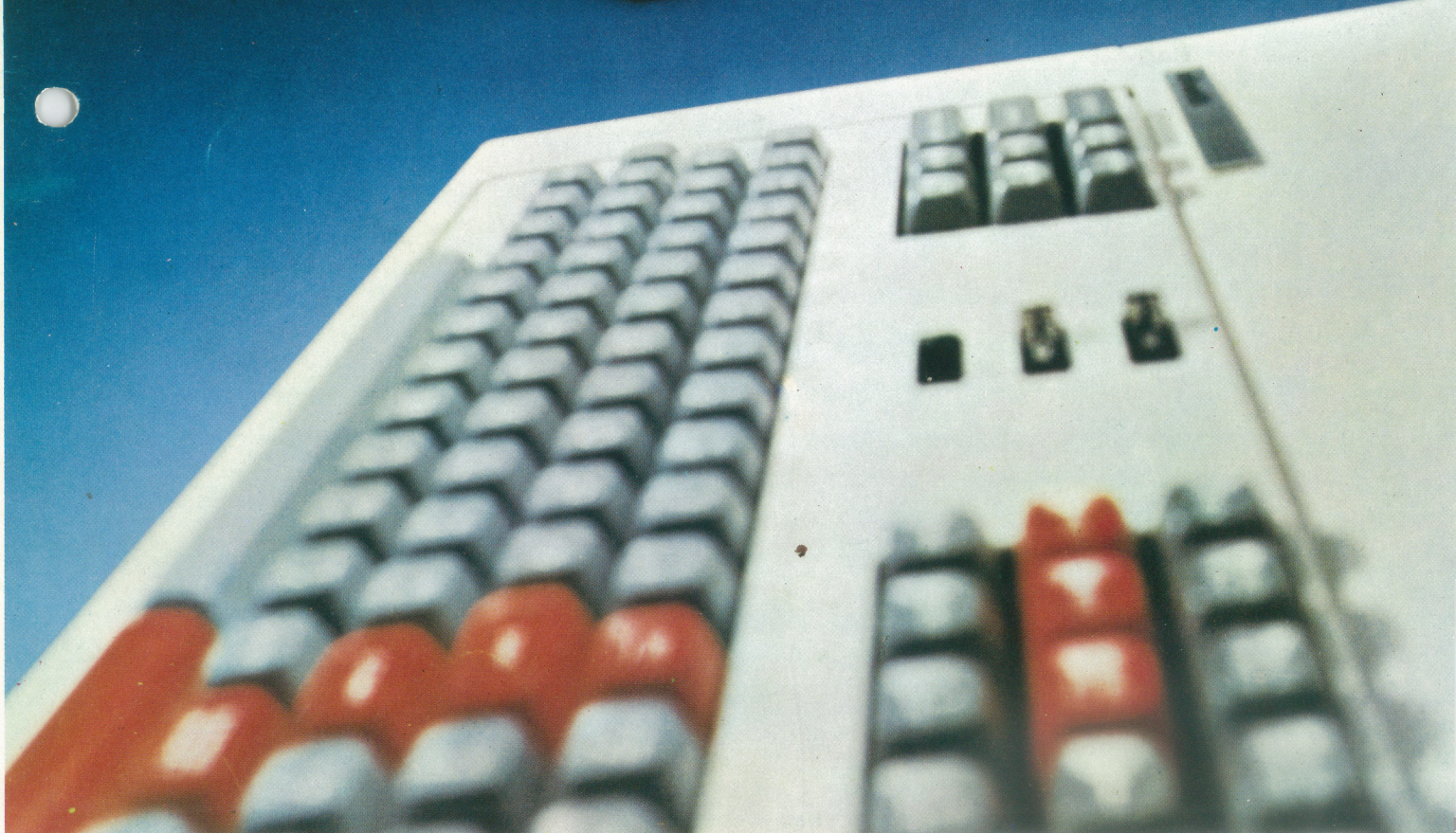


Olivetti DE 520 System.

A new machine, a 3rd generation input system that takes logic and electronic techniques to the very source of the data it handles



The Olivetti DE 520 System for:

Data Entry Communications Off-Line Printing Media Conversion

Cuts data entry costs

- By using low-cost, re-usable, magnetic tape cassettes
- By converting various input media to magnetic tape
- By its ability to act as a communications station

Cuts data entry time

- By tight edit controls which reduce the need for key-verifying
- By easy, fast keyboard operation
- By displaying all the information necessary to assist the operator reach her maximum throughput level

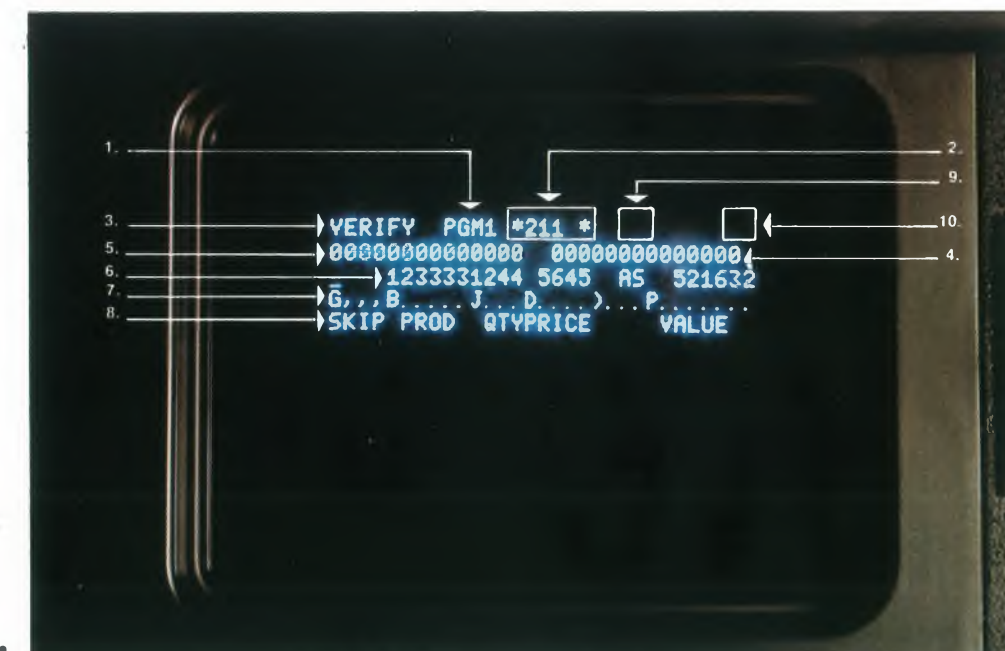
Allows flexible systems design

- Makes decentralisation possible through low cost of remote data entry stations
- Sophisticated off-line document production methods minimise transmission costs where high volumes are a problem
- Apart from ROM firmware for standard facilities, the DE 520 can be extended with up to 8K bytes RAM for non-standard data screening and user programs

The Video Screen

A major advance which establishes the DE 520 as leader in the field of data collection technology is the display screen. The prime purpose of the screen is to give the operator complete information regarding the block of data which she is encoding, the nature and size of the program fields currently in control and the actual name of the field in which she is working. The screen also displays messages showing the mode of operation and, if an illegal condition is detected, the system displays a message giving specific nature of the error.

By combining all this information on the screen the operator is able to see her position instantly, to scan the current record being entered, to check the name of the next field during entry or to understand and correct an indicated error without loss of valuable time. This comprehensive feedback afforded by the screen to the operator greatly enhances her throughput capability. So the video screen together with the currently active program effectively guide the operator through her job.



1. Indicates Controlling Program
2. Device Assignment Area
3. Operating Mode
4. Grand Total Accumulator
5. Subtotal Accumulator
6. Current Data Line
7. Current Control Program Line
8. Names Of Current Fields
9. Error Message Area
10. Communications Indicator Area

The Keyboard

The keyboard is very fast and light to operate and is designed to aid throughput by its fully rational layout. This layout ensures that non-specialised personnel may be rapidly trained in its effective use. "Roll" detection adds to speed providing an input smoothing function by allowing a second key to be depressed or commended to be

depressed before the first key is fully released. If two keys are depressed together the second character will be registered when the first key is released. In addition to the numeric keys on the standard typewriter keyboard, there is a simplified numeric keyboard allowing high-speed numeric data entry. All function keys are grouped together

according to logical association. Where they are only occasionally used, they are placed well away from the character and field control keys. For extra safety data keys have a pressure of 70 grams and control keys require a pressure of 250 grams.

- A. Manual Controls
- B. Memory Address Control
- C. Device Address Controls
- D. Automatic Function Controls
- E. Mode Selection Controls
- F. Program Selection Controls
- G. Device Selection Control
- H. Short Numeric Keyboard
- I. Field Controls
- J. Alphanumeric Keyboard





Firmware checks

In its memory the DE 520 stores up to two powerful data format programs at any one time. The program steps governing data entry exert a powerful yet flexible editing function over the data as it is keyed. The controls are such as to ensure that data is as error free as possible yet to assist the operator in rectifying errors detected by the program. The types of checks already included in the firmware:

- Accumulations in two independent registers to allow arithmetic totals control.
- Check digit verifications.
- Field length controls on over and under-capacity entries for both Alpha and Numeric fields.
- Positive checks against omission of essential fields.
- Automatic space or zero filling of fields.
- Control over type of character entered into any field position (Numeric or Alpha-numeric).
- Automatic duplication, skipping and incrementing of selected fields.
- Automatic insertion of program indicators.
- Selective verification of designated fields.

TPS programming language

For any problem beyond the above mentioned standard facilities, user-programs can be written by means of the TPS programming language. Source programs, written in this macro

language can be compiled on the DE 520 system itself, using the TPS two-pass compiler. Other available system programs are: source editor/corrector, debug and dump. The use of TPS however is not limited

to screening of input data, but can be extended to other area's such as off-line processing and step-by-step operator guidance.

Data entry example

The document illustrated below shows a typical example of input data screening. In this case - with several formats within

the same application - the second cassette recorder is assigned as format device, which means that under program control the proper

format is automatically loaded from cassette into a format buffer.

Positive control against omission of name and address

Numeric only Capacity controlled

Check-digit validation on these masterfile fields

Hash-total Quantity and price

Manufacturing Co. Pty. Ltd.
GEORGE STREET, PORT ADELAIDE, S.A. 5015

Date: 17/8/72

SHIP TO:
Martin Electronics Pty. Ltd.,
124 Collins St.,
COORPAROO 4151

CHARGE TO:
Martin Electronics Pty. Ltd.,
St. George's Tce.,
AUBURN 2144

CUSTOMER NO. 147893

REPRESENTATIVE NO. 125

DATE SHIPPED 14/8/72

SALES TAX NO. Q. 56893

INVOICE NO. 17542

Product Code	Description	Quantity	Price	% Discount	% Sales Tax	Amount
1560	Transistor, 2N5678	16	1.75	10.00		25.20
1479	Transistor, 3L8904	20	1.75	10.00		31.50
1230	Transistor, 7R909	45	1.66	10.00		67.23
2584	Diode, IN65432/9	8	1.25	10.00		9.00
3699	Thyristor 5487M	1	12.00	10.00		10.80
6981	Transducer 6T42318	26	75.00	10.00		1755.00
SHIPPING CHARGES AIR EXPRESS						5.75
EDP DEPT. HASH TOTAL 9457						
Special Instructions:						
						\$1904.48
						Total Amount

Numeric only Capacity controlled when entered

Prove against amounts total

Numeric only Capacity controlled

Numeric only (4 digit capacity)

Automatic program change at end of document head details.

Accumulate amounts

Single key stroke program change when last item detail line recorded.

Automatic program change. On proof of document total recall document head program

Term. HK. 23.290,=-
 1 cassette 2450,=-
 3k+TPS 3030,=-
 Modem. 2600,=-
 line interface 2000,=-
 cyphrnh 15.000,=-
 165 kbit/sec
 3kbit/sec
 15 kbit/sec

The Cassette

Another major benefit offered by the DE 520 is the use of the magnetic tape cassette as an intermediate data storage medium.

The cassette embodies many advantages:

- Large capacity (typically about 180.000 characters. More information than can be held on 2.000 punched cards).
- Inexpensive.
- Absolute accuracy. "Read after write" check, character and block checks.
- Re-usable.
- Easy to identify by using labels.
- Fully enclosed - will resist contamination by dust, cigarette ash etc. Ideal for normal office environment.
- Easy to file and then to recall date encoded.
- Easy to load and unload.
- Complies with ANSI and latest ECMA 34 standards.



Communications

The ability of the Olivetti DE 520 to capture data remotely on cassettes and transmit/receive over public telephone lines, provides a practical method for accelerating communication without excessive extra costs.

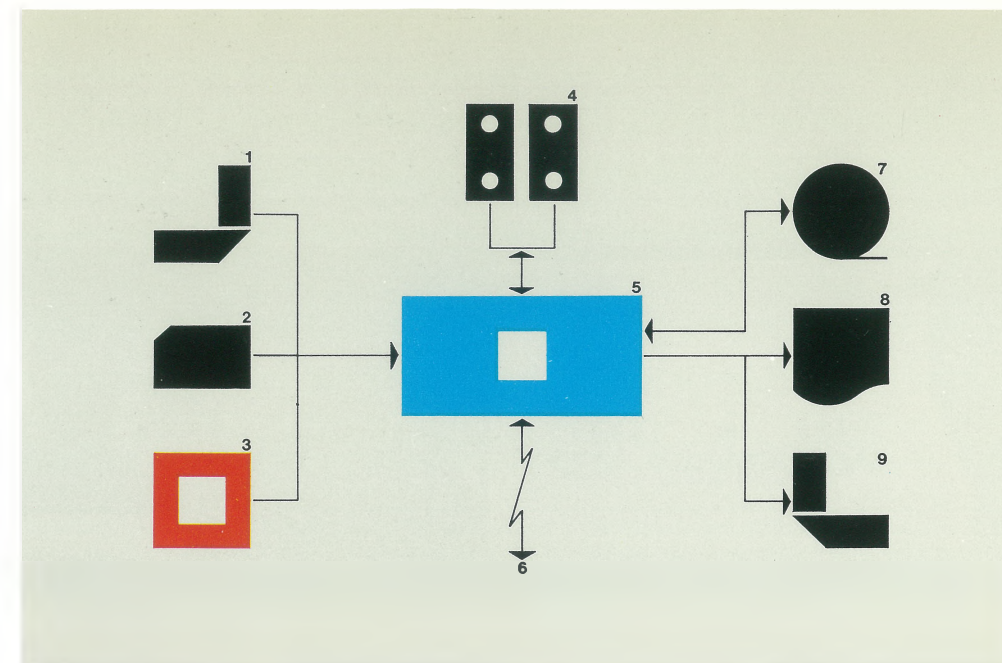
Transmission may be at 600 to 4800 bps. During transmission the status of the various peripherals and the Line are displayed on the screen. Transmission codes available are ASCII or EBCDIC with various transmission protocols.

Multi-Media Conversion

The wide range of peripheral units available enables the user to perform off-line media conversion on the same DE 520 that is used for data entry. The input output assignment at any given time, is shown on the screen between two asterisks.

Typical examples would be:

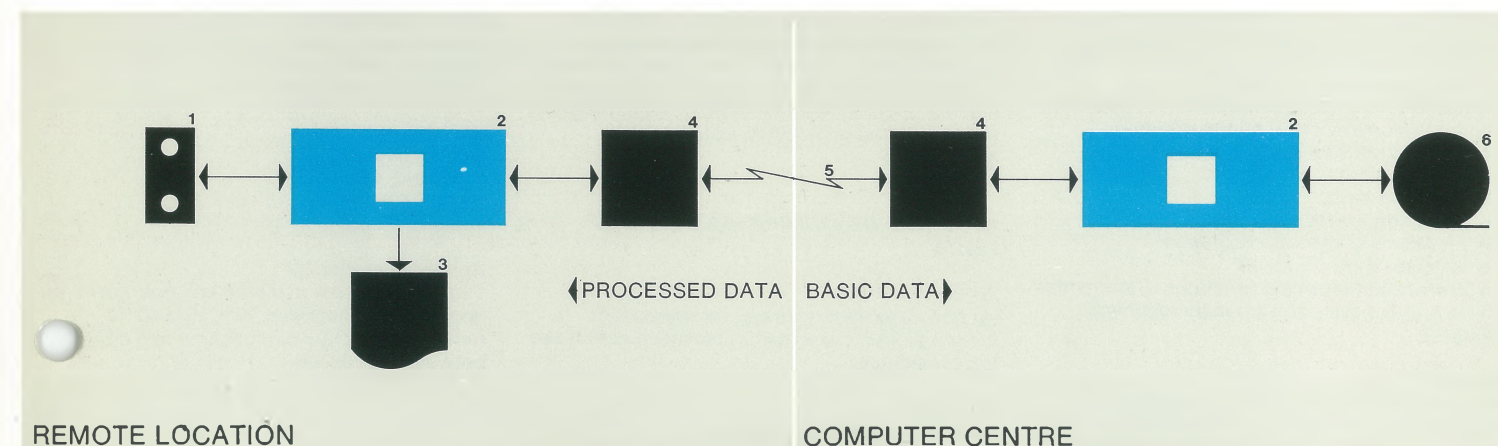
- * TP * Transfer records from compatible tape to printer.
- * 1L * Transfer records from cassette No. 1 to communications line (1200 baud).
- * 1TP * Transfer records from cassette No. 1 to compatible tape and print them.



1. Paper Tape Reader
2. Card Reader
3. CMC 7 MICR Reader
4. Up to 2 Cassette Drives
5. DE 520 Central Unit
6. Communication Line
7. Compatible Tape Unit
8. Printer
9. Paper Tape Punch

Remote Job Entry (R.J.E.)

A typical DE 520 RJE configuration is shown:



1. Cassette
2. DE 520
3. Printer
4. Modem
5. 1200 Baud STD Line
6. Compatible Tape Unit

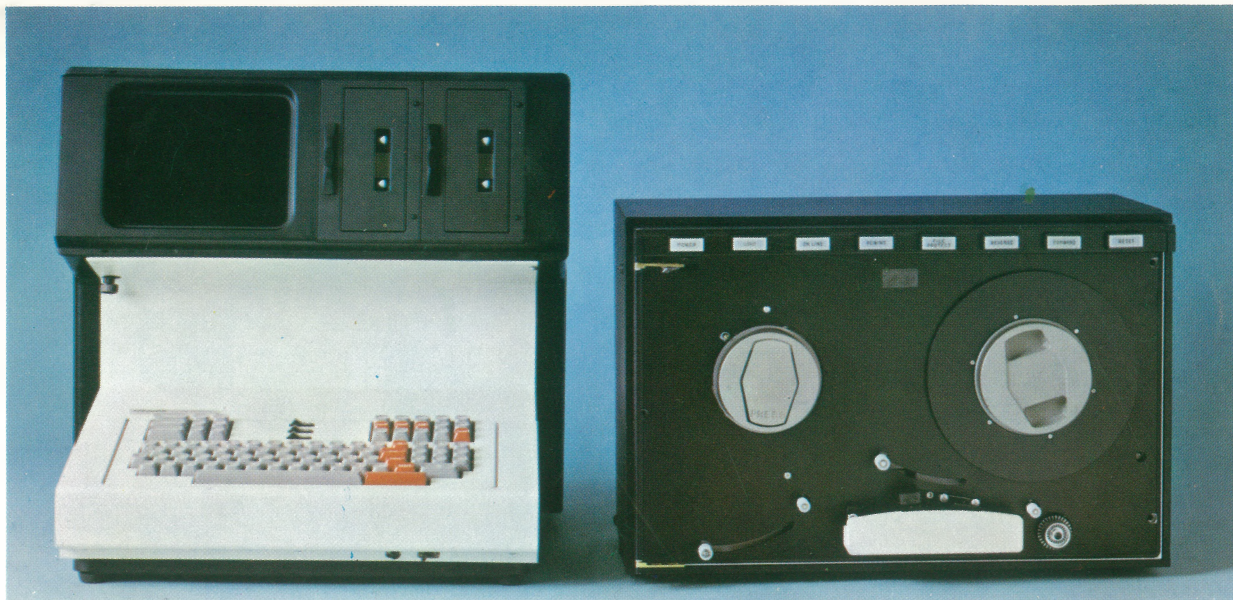
A typical DE 520 RJE configuration is shown:

With the above configuration the problems associated with RJE (those of obtaining "clean data" prior to

transmission, line cost and hardware costs), are minimised, whilst obtaining high data preparation, transmission and printing speeds.

Printing

A range of printers, offering speeds of 15 characters per second up to 1200 lines per minute, are available for the DE 520. Data may be printed under program control, or alternatively pre-formatted tapes, which include print control characters, can be used.



SPECIFICATIONS DE 523 BASIC MACHINE

a. Central unit and memory.

1. 8 bit mini processor with 2μ sec cycle time
2. up to 8K bytes MOS ROM (firmware) containing monitor, program-micro instructions, conversion tables, driver routines for peripherals, searching facilities, format controls etc.
3. up to 8K bytes RAM (read-write memory) to contain data and programs. The first kilobyte of RAM memory will be used for 2 data buffers and 2 format buffers of 216 characters each.

b. Keyboard (typewriter version)

- electronic keyboards with a speed of up to 2.500 strokes per minute, comprising alphanumeric keyboard with 44 keys for entering alphabetic data (26 letters) and numeric data (10 digits), punctuation marks, special signs and space bar;
 - simplified numeric keyboard with 11 keys, for entering numeric data, minus sign and 11 ASCII code service characters.
 - control keys for:
 - character shift
 - operating functions (4 keys)
 - preselecting operations (9 keys)
 - function keys (15 keys)
 - presetting automatic functions (3 switches)
- (There is also a special keypunch keyboard available).

c. Screen

Has a display capacity of 341 characters, of which the first line will be used to indicate status conditions and error messages. The remaining 10 lines can be freely used to relay any selected information under program control to the operator. For data entry applications the complete input buffer will be shown plus the current lines of the format programs.

d. Cassette recorder

Data recording complies with ANSI and latest ECMA 34 standard.
code: ISO5/USASCII
density: 800 bpi (bitserial)
interrecordgap: 1.09"
reading and writing speed: 12.5 ips.
rewind speed: 120 ips.
block check: 2 CRC characters
effective capacity from ca. 2.000 records of 80 chs. to ca. 1.000 records of 216 characters.

OPERATING MODES

FREE FORM for setting up the machine, preselecting data input and output devices and processing data without program control.
ENTER for keying data under program control
VERIFY for second entry verification.
Keyed data is compared to that contained on the magnetic cassette and corrected data is automatically reinserted under program control.
BATCH for carrying out data flow recording and reading operations automatically, searching on tape, and total or selected transfer into other media.

OPTIONAL DATA INPUT AND OUTPUT UNITS

Cassette drives

up to 4 cassette drives can be supported:
2 internal and 2 external units (specification see basic machine)

Tape drive

computer compatible tape unit:
7 track - 556 bpi, NRZI
9 track - 556 and 800 bpi, NRZI
9 track - 1600 bpi, phase encoding
read and write speed 12.5 ips.

Printers

serial printers 15 to 160 chars. per sec. with 64 or 96 character set, printline 132 chars. line printers 125 to 1200 lpm.

Line control unit

for synchronous procedures up to 4800 bps. Line protocol is determined by communication driver routine loaded in RAM memory. Further on card- and papertape readers and punches, optical document readers, mark sensing readers etc. can be connected.

D 14 stand

A special stand for the DE 523 machine is available, equipped with a working surface for documents.

ELECTRICAL SPECIFICATIONS ETC.

Mains supply: 115-127-220-240 V
Single phase AC at 50-60 Hz
Nominal consumption: 385 W

Dimensions:
Width: 50 cm.
Height: 45 cm.
Depth: 50 cm.
Weight: 35 kg.

Ambient conditions:

Temperature: the machine can operate in temperatures between 10 °C and 40 °C.
Relative humidity: the machine can operate between 0-90% RH.

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