COMPUTER AND
LOCAL
AREA
NETWORK SYSTEMS LTD

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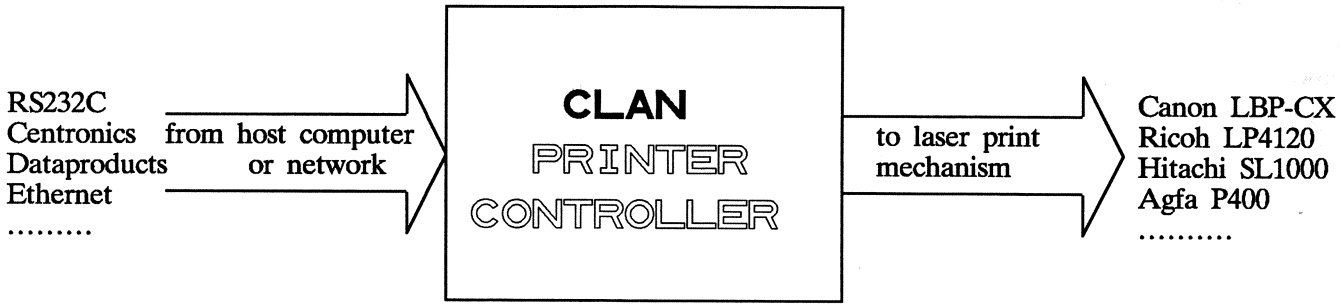
# Intelligent Laser Printer Controller




The CLAN laser printer control system is a powerful general-purpose controller adaptable to a number of print engines and host interfaces by use of personality cards.

The controller has been designed to allow the full potential of laser printer technology to be exploited -- it goes well beyond what is required to emulate existing letter-quality impact printers.

- Possible applications start from the printing of letters with letterheads and logos included by the printer itself, thus removing the need for preprinted stationery. Business forms are easy to create and letters or reports can be illustrated with pie-charts, bar-graphs, diagrams, and even greyscale photographs.
- In Computer Aided Design applications a printer fitted with the CLAN controller can be used in place of slower plotters as a fast design verification facility, to preview printed circuit board layouts, VLSI masks etc. It can also serve to produce the design documentation allowing for easy inclusion of technical drawings, circuit diagrams and sketches.

The Controller's local intelligence allows access to its powerful document creation capability from any personal microcomputer, making it easy to introduce into currently existing office environments. The protocol used is compact but powerful, so that a minimum of control information requires to be added to plain text.

The controller also emulates a number of alternative industry standard printer protocols. These allow printers to operate with existing software generating output targeted for popular daisy-wheel and high-density dot matrix printers. Optionally it can emulate DVI output format produced by TEX or device-independent output from TROFF, the main text-processing facility under UNIX™. The advantage of this approach is that it makes it possible to introduce laser printers into existing environments and put them to work straight away. However, it is expected that most installations will find it advantageous to switch in due course to the general-purpose protocol, since emulation modes do not allow the full capability of laser printing to be utilised.

The controller consists of a single printed circuit board carrying the complete control system and storage. An additional personality card is required, for attachment to the chosen print engine. This covers most of the current and announced laser printing devices. There is an RS232 interface on the main board; an additional personality card is required for alternative host interfaces.

**Companies interested in the possible adoption of the CLAN controller in a product, or in the distribution of complete printers incorporating the controller are invited to contact CLAN Systems at the address given above**

# CLAN SYSTEMS LTD LASER PRINTER CONTROLLER

## Summary of features

### Hardware summary

- Powerful 16/32 bit microprocessor
- 0.5Mbyte ROM
- 0.5Mbyte workspace and buffer RAM
- 2-ported 1Mbyte page buffer RAM
- Non-volatile RAM for holding printer setups and diagnostic history (total page counter, user page counter, paper jam counter etc.)
- Front panel for menu-driven setup and interrogation
- Custom DMA capability for transfer of image data to the print engine
- Decoupling of bus and memory bandwidths for processing and printer video data transfer
- Universal Input/Output interface for optional interface expansions
- Universal print engine interface for easy adoption of current and forthcoming printers
- Page module expansion interface to accomodate larger or multiple page buffers

### Standard Functional Features

- Multiple raster fonts
- Multiple line vector fonts, dynamically scaleable
- No restriction on line or page complexity
- Line-drawing graphics, dynamically scaleable
- Bit-map graphics, including greyscale images
- Text-formatting capability within controller
- Logos and pictures definable as single characters
- Fonts loadable from host
- RS232C interface operating at up to 19.2kbaud.

### Optional Features

- Fonts and images loadable from local microfloppy
- Alternative interfaces or network connections
- Support for A3 printing or higher resolutions

## RICOH LP4120
### Print engine

**Configuration:** Tabletop

**Dimensions:** H: 12.0 inches (305mm)
W: 20.0 inches (510mm)
D: 19.5 inches (495mm)

**Weight:** 112 lbs (50kg)

**Development:** Dry type electrophotography

**Paper:** Plain paper cut sheets A4, letter size

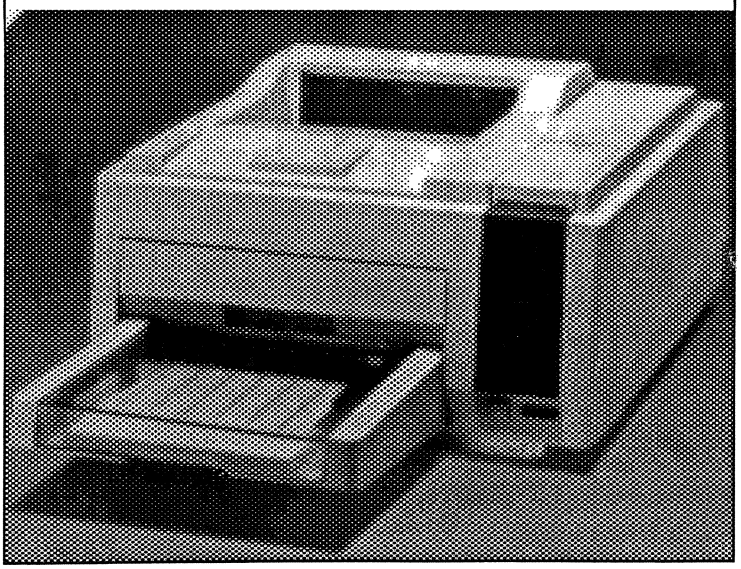
**Print width:** Max. 8.00 inches/LT

**Print speed:** 1st page less than 15 sec. Subsequent pages 12 pages/minute

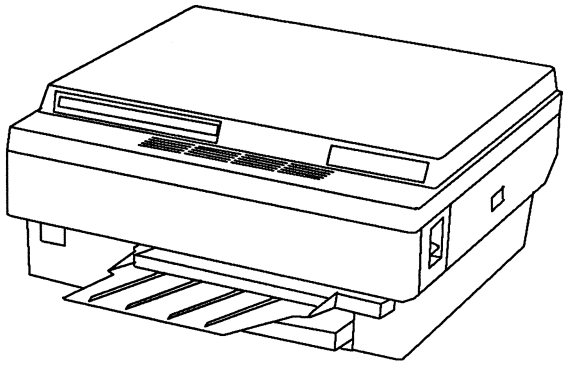
**Warm up:** Less than 90 sec.

**Paper feed:** Cut sheet automatic feed, 250 sheets input tray (75g/m$^2$), output face down.

**Resolution:** 300x300 dots/inch



## CANON LBP-CX
### Print engine



**Type:** Monocomponent Electrophotographic Page Printer

**Dimensions:** 475(W) x 415(D) x 293(H)mm

**Weight:** 24.5 kg

**Print Speed:** 8 Pages/Min. (all paper sizes except legal)

**1st Print:** 18 Sec. (during standby)

**Paper Size:** A4, B4, Letter, Legal

**Paper feed:** Cut sheet automatic feed, manual feed possible, 100 sheets input tray (80g/m$^2$), output 20 sheets (face up)

**Resolution:** 300x300 dots/inch

**Warm up:** 2Min. (Room temp. 20°)

**Noise Level:** Printing: below 55dB
Standby: below 45dB

**Interface:** Serial Video Signal