VT27 | Virtual Terminal

User guide for the reusable HD61700 viewer | lib-set-01 | 18 November 2026

Origin: developed, tested and donated by CS617 Chapter 01 v2b. This exact source generation is admitted as a library member with inherited, **PB-2000C-emulator-bounded** donor evidence. Applications own documents, menus, serial transport and command-event responses.

What it is

VT27 displays an application-owned 24-row by 80-column text document on a four-row, 32-column LCD. It can read writable RAM, read-only RAM or ROM. Opening, navigating, showing Help and reversing the LCD display do not rewrite the document. New applications must supply compatible platform services and their own event handling.

Navigation and key controls

Control	Viewer action
UP / DOWN	Select prior / next document line; viewer scrolls to keep it visible
u / d	Move selection by four lines, clamped to 1..24
LEFT / RIGHT	Move horizontal window between columns 1, 31 and 49
t / b	Top at (row 1, col 1) / bottom full page at rows 21..24
s	Show current visible line and column range
EXE	Return selection event 3 when the document mode permits it
c (plain)	Return caller communication event 9; not the same as :c
Q / MENU / BRK	Return distinct events 0 / 1 / 2 for the application to handle

Colon commands

Command	What VT27 does
:h	Three built-in Help pages; EXE advances, Q/other key closes Help
:l	Jump to line 01..24 then EXE; blinking underscore is just input feedback
:i	Toggle LCD inverse video; underlying document bytes unchanged
:s / :R	Show viewport status / redraw current viewport
:t	If caller permits, return event 8 requesting SEND; no UART action inside viewer
:q / :c	Quit event 0 / caller action event 4 (where permitted)
:v / :e	Events 6/7 reserved for application handling; not a universal register viewer or erase tool

Command letters are case-insensitive. Plain **t** means top; **:t** requests SEND. Plain **c** and **:c** are distinct. A command appearing in Help does not grant permission to use it.

Document access and application ownership

Binding	Read	Write	EXE / :c	App :v	App :e
RAM writable (0)	Yes	Yes	Event	Event	Event request
RAM read-only (2)	Yes	No	Event	Event	Denied
ROM (1)	Yes	No	Denied	Denied	Denied
RSEL ROM (3)	Yes	No	Source permits	Source permits	Denied

RSEL is source-visible but did not have separate independent consumer coverage in Chapter 01. An app can refuse a returned event. The viewer does not automatically erase, edit calculator registers or transmit.

SEND and export

When :t is accepted by the application capability callback, VT27 returns semantic event 8. The caller can then invoke the companion VT_EXPORT serializer or its own transport. VT_EXPORT emits **24 x (80 document bytes + CR + LF) = 1,968 bytes** to the consumer-supplied byte sink. It does not open/close a port, control a UART, or certify that a receiver captured all bytes. Navigation and inverse video do not change the export payload.

New document versus reopening

A fresh VT_BIND operation initializes normal video. VT_OPEN re-enters the currently bound document while preserving its current view choice; the caller decides whether to return after a command. Supported event paths preserve the semantic return in register $0. No general register-preservation or machine portability guarantee follows from this one donor.

Known limitation

The built-in :h Help is fixed, not configurable: it displays :v and :e even when the selected document is read-only and those operations are denied. This is an accepted fact of VT27, not a user permission or a promise of a future enhancement.

For application authors

Link the three exact includes vt27.inc, vt26_lcd.inc and export.inc; provide 1,920-byte document storage, VT state RAM, key/LCD/firmware integration, event dispatch and appropriate callbacks. Consult API.md/API.json for exact symbols, register effects and known unqualified paths. This is not a standalone cartridge ROM. Each new consumer must verify its own native build, RAM/bank safety, event handling and emulator behavior.

Evidence and distribution scope

Accepted donor: Chapter 01 v2b, ROM SHA-256 61d284da...d1f479, 22/22 owner-reported PB-2000C emulator tests. No independent generic consumer, physical hardware, AI-1000 or wire-level RS232C qualification is claimed. The inverse renderer contains DejaVu-derived glyph bitmap material; preserve attribution and review licensing before separate public redistribution. This guide does not itself announce a public library Stable release.

Praeteritum ad futurum servamus.