

FRST Computer

User Manual

Public Beta

frstcomputer.com

For the few of us.

First Light

The deck boots to a shell prompt. Type a command, press Enter. Nothing is running that you did not start.

help	the short list
man cmd	the long version
man -k word	search the manual
tour	a guided walk

The rest of this manual is on the deck. There are 49 manual pages covering every command, and they are stored in the deck's own filesystem — no network, no host, no account. This booklet is the welcome.

Your Screens

Three shells run at once, in the manner of *screen*.

F1 F2 F3	go to that screen
Ctrl-A n / p	next / previous
Ctrl-A c	new shell
Ctrl-A a	send a literal Ctrl-A

Start a download on one, read on another.

The Shell (ZRC)

FRST runs ZRC, an rc-like shell. If you have used Plan 9's rc, you are home. **man rc** has the whole language.

Pipes:	ls grep txt
Redirection:	echo hi > /n/local/notes.txt
Variables:	x = hello; echo \$x
Lists:	files = (a.txt b.txt)
Substitution:	echo `{date}
Functions:	fn greet { echo hello \$1 }
If/else:	if (test -f foo) echo found
While:	while (true) { echo tick; sleep 1 }
For:	for (f in *.txt) echo \$f
History:	up/down arrows

Files

ls [dir]	list files
cat file	print contents
cp src dst	copy
mv old new	rename/move
rm file	delete
mkdir dir	create directory
grep pat [f]	search
stat file	details
df	filesystem space
p file	page through it

Your storage is **/n/local** — 8 MB, and yours. Files persist across reboots and survive firmware updates.

Editors

se [file]	screen editor (no modes)
vi [file]	vi (hjkl, i/a/o, :wq)
ed [file]	line editor (classic)
sam [file]	structural regex editor
sed cmd [f]	stream editor

Ctrl-Z suspends an app. **fg** resumes it.

Everything Is A File

FRST speaks 9P, the Plan 9 file protocol. A connection is not a socket you program against; it is a directory you mount. The network is at **/net**, the running threads are at **/proc**, and a machine on the other side of the world is at **/n/dc** once you have mounted it.

That is the whole idea of the machine. **man bind** and **man ns** explain it properly.

ns	show the namespace
ls /net	the network, as files
ls /proc	the threads, as files

Getting Online

attune connects to a data crystal and grafts its network into yours. The first run mints your key and claims your name; there is no password to forget.

attune	tune in
handle name	claim your name
bbs	the board
gopher host	browse gopherspace
telnet host	a terminal, elsewhere
ftp host	fetch files
finger user@host	
ping host	

Gopher

j/k/arrows	move cursor
Enter/Right	follow link
Left/Esc/h	go back
Space/b	next / previous page
B	add bookmark
w	post (where allowed)
q	quit

The Mesh

LoRa radio. No towers, no carrier, no account. Decks in range relay for each other, and a crystal on the mesh is a whole BBS with no internet behind it.

who	who is out there
chat	mesh chat
say msg	one message
achat	chat over the namespace

Forth

The deck's own programming environment: a language that lives on the machine and is edited on the machine.

forth	start it
2 3 + .	prints 5
: SQUARE DUP * ;	define a word
7 SQUARE .	prints 49
SH ls /net	run a shell command
BYE	exit

The FRST vocabulary lives at **/n/local/forth/frst.fth** and is yours to edit.

Amusements

zork lostpig	interactive fiction
frotz file	any Z-machine story
tetris snake	the classics
chess	a decent opponent
zzt	tile adventure
wumpus hangman	older still
woz	an Apple 1, inside
fortune pom	small pleasures

man games lists them all with their keys.

Keyboard

Up/Down	command history
Ctrl-C	cancel
Ctrl-D	exit shell
Ctrl-L	clear screen
Ctrl-U	kill line
Ctrl-W	delete word
Ctrl-Z	suspend (fg resumes)
Ctrl-]	escape telnet/con
F1 F2 F3	switch screens

Where Things Live

/n/local	your files
/n/local/man	the manual
/n/local/text	reading material
/n/local/rc	shell scripts
/n/dc	the crystal, mounted
/net /proc	the machine, as files

Hardware

Processor	ESP32-S3, 240 MHz, 8 MB PSRAM
Display	7.5" e-ink, 800x480
Radio	SX1262 LoRa (sub-GHz mesh)
Keyboard	BLE, spoken over 9P
Storage	16 MB flash, 8 MB filesystem
Frontlight	WS2812
Boot	MCUboot, updates over the air

The screen holds its image with the power off. The deck dims after two minutes and sleeps after five; press any key.

A Note On The Pace

E-ink takes a moment to settle. That is not a fault being tolerated — it is the point. This is a machine for reading, writing and thinking at the speed those things actually happen.

Built by Jon Sharp
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