LCD Menu Tree

This page is a work in progress, based on Marlin 1.1.2.

In addition to a serial/usb/host interface, Marlin also includes a comprehensive user interface designed for inexpensive character and graphical LCD controllers. Rotate a knob or use buttons to navigate menu items, edit values, and make other adjustments. Click the knob or press a button to choose menu items, exit adjustment screens, and perform other actions.

Note: In low-level contexts we refer to the first extruder as `E0`, the second as `E1`, etc. However, at "user level" in the LCD menus, we refer to the first extruder as `E1`, the second as `E2`, etc. (This may change in future depending on user-preference.)

The tables below describe every menu item for every option (and all 5 extruders). In normal use the LCD menu will be much smaller in size.

Main Menu

Item	Description	Requirements
« Info Screen		
Debug »		HAS_DEBUG_MENU (LCD_PROGRESS_BAR_TEST)
Case Light ON/OFF	Toggle the case light	MENU_ITEM_CASE_LIGHT
Reset BLTouch		BLTOUCH
Tune »		(if printing)
Prepare »		(if idle)
Calibrate Delta »		DELTA_CALIBRATION_MENU (if idle)
Control »		
Pause/Resume Print		SDSUPPORT (while SD printing)
SD Card »	Navigate the SD Card	SDSUPPORT (while idle)
Init SD	M21 (/docs/gcode/M021.html) detect SD Card	!SD_DETECT && SDSUPPORT
Info »		LCD_INFO_MENU

Debug

Item	Description	Requirements
« Main		
Progress Bar Test	Test the encoder using a progress bar	LCD_PROGRESS_BAR_TEST

Tune

The Tune menu is only available during active printing. Most items in this menu are editable values.

Item	Description	Requirements
« Main		
Speed: ---	Feed Rate Multiplier	
Bed Z: ---	MBL Z offset	MESH_BED_LEVELING && LCD_BED_LEVELING
Nozzle (#): ---	Nozzle temperature(s)	HOTENDS
Bed: ---	Bed temperature(s)	HAS_THERMALLY_PROTECTED_BED && WATCH_BED_TEMP_PERIOD > 0
Fan Speed (#): ---		FAN_COUNT > 0
Flow (#): ---	Flow Multiplier(s)	EXTRUDERS
Babystep X		BABYSTEPPING && BABYSTEP_XY
Babystep Y		BABYSTEPPING && BABYSTEP_XY
Babystep Z		BABYSTEPPING && !BABYSTEP_ZPROBE_OFFSET
Z Probe Offset	M851 Z (/docs/gcode/M851.html)	BABYSTEP_ZPROBE_OFFSET
Change Filament »	M600 (/docs/gcode/M600.html)	FILAMENT_CHANGE_FEATURE and not too cold

Prepare

The Prepare menu is only available when the machine is not printing.

Item	Description	Requirements
« Main		
Move Axis »		DELTA requires G28 first
Auto Home	G28 (/docs/gcode/G028.html)	
Auto Home X	G28 X (/docs/gcode/G028.html)	INDIVIDUAL_AXIS_HOMING_MENU

Item	Description	Requirements
Auto Home Y	G28 Y (/docs/gcode/G028.html)	INDIVIDUAL_AXIS_HOMING_MENU
Auto Home Z	G28 Z (/docs/gcode/G028.html)	INDIVIDUAL_AXIS_HOMING_MENU
Bed Leveling »	G29 (/docs/gcode/G029-abl.html) guided manual probing	LCD_BED_LEVELING
Unified Bed Leveling »	G29 (/docs/gcode/G029-ubl.html)	UNIFIED_BED_LEVELING
Set Home Offsets	M428 (/docs/gcode/M428.html)	!DELTA && !NO_WORKSPACE_OFFSETS
Disable Steppers	M18 (/docs/gcode/M018.html)	
Change Filament	M600 (/docs/gcode/M600.html)	FILAMENT_CHANGE_FEATURE and not too cold
Cooldown		TEMP_SENSOR_0 (shown if currently heating)
Preheat PLA »		TEMP_SENSOR_0
Preheat ABS »		TEMP_SENSOR_0
BLTouch Self-Test		BLTOUCH
BLTouch Reset		BLTOUCH (if triggered while disabled)
Power ON/OFF		HAS_POWER_SWITCH
Autostart		SDSUPPORT && MENU_ADDAUTOSTART

Move Axis

The move axis sub-menu was reorganized for Marlin 1.1. To use the move commands, first select the axis to move, then select the move distance. Use the controller wheel (or arrow buttons) to adjust the axis position. For larger move sizes, Marlin waits until you stop moving the controller for 1/2 second before it starts the move, giving you an opportunity to catch overshoot.

Item	Description	Requirements
« Prepare		
Free XY	Move Z down to safe-zone	DELTA (above safe zone)
Move X »	Select X move size, do moves	(may require G28 (/docs/gcode/G028.html), safe zone, etc.)
Move Y »	Select Y move size, do moves	(may require G28 (/docs/gcode/G028.html), safe zone, etc.)
Move Z »	Select Z move size, do moves	(DELTA and SCARA require G28 (/docs/gcode/G028.html))
Auto Home	G28 (/docs/gcode/G028.html)	(shown if not homed)
Select E1/E2	Sends " T0 " / " T1 "	SWITCHING_EXTRUDER
Move E »	Select Active E move size, do moves.	
Move E1 »	Select E1 move size, do moves	EXTRUDERS >= 2 (if not too cold)
Move E2 »	Select E2 move size, do moves	EXTRUDERS >= 2 (if not too cold)
Move E3 »	Select E3 move size, do moves	EXTRUDERS >= 3 (if not too cold)
Move E4 »	Select E4 move size, do moves	EXTRUDERS >= 4 (if not too cold)
Move E5 »	Select E5 move size, do moves	EXTRUDERS == 5 (if not too cold)

Bed Leveling

The Bed Leveling menu groups together commands for calibrating the nozzle-to-bed distance. Different options will appear depending on your setup and the type of leveling you've enabled. **Level Bed** runs the default G29 procedure. For auto bed leveling this will deploy the probe, measure all points, and stop. For manual leveling (PROBE_MANUALLY or MESH_BED_LEVELING) you'll be taken through a step-by-step process.

Item	Description	Requirements
« Prepare		
Free XY	Move Z down to safe-zone	DELTA (above safe zone)
Auto Home	G28	Unknown position
Leveling On/Off	M420 S	Valid mesh, known position
Level Bed	G29 / G29 S1	Known position
Fade Height: ---	M420 Z	ENABLE_LEVELING_FADE_HEIGHT
Mesh Z Offset: ---	G29 Z	MESH_BED_LEVELING
Z Probe Offset: ---	M851 Z	HAS_BED_PROBE (BABYSTEP_ZPROBE_OFFSET for active Z adjust)
Load Settings	M501	EEPROM_SETTINGS
Save Settings	M500	EEPROM_SETTINGS

Unified Bed Leveling

The Unified Bed Leveling menu groups together commands for leveling and mesh editing. Since this menu is very large and complex, it will be described in a separate document - coming soon.

Preheat PLA

Set the fan speed plus bed and/or nozzle temperature to the preset "PLA" settings. Use M145 S0 ... to change the temperatures and fan speed used for this menu.

Item	Description	Requirements
« Main		
Preheat PLA	Active Extruder, fan, bed	HOTENDS == 1
Preheat PLA End	Active Extruder only	HOTENDS == 1

Item	Description	Requirements
Preheat PLA 1	Preheat E1 (and bed)	HOTENDS >= 2
Preheat PLA End E1	Preheat E1 only	HOTENDS >= 2 && TEMP_SENSOR_BED
Preheat PLA 2	Preheat E2 (and bed)	HOTENDS >= 2
Preheat PLA End E2	Preheat E2 only	HOTENDS >= 2 && TEMP_SENSOR_BED
Preheat PLA 3	Preheat E3 (and bed)	HOTENDS >= 3
Preheat PLA End E3	Preheat E3 only	HOTENDS >= 3 && TEMP_SENSOR_BED
Preheat PLA 4	Preheat E4 (and bed)	HOTENDS >= 4
Preheat PLA End E4	Preheat E4 only	HOTENDS >= 4 && TEMP_SENSOR_BED
Preheat PLA 5	Preheat E5 (and bed)	HOTENDS == 5
Preheat PLA End E5	Preheat E5 only	HOTENDS == 5 && TEMP_SENSOR_BED

Preheat ABS

Set the fan speed plus bed and/or nozzle temperature to the preset "ABS" settings. Use `M145 S1 ...` to change the temperatures and fan speed used for this menu.

Item	Description	Requirements
« Main		
Preheat ABS	Active Extruder, fan, bed	HOTENDS == 1
Preheat ABS End	Active Extruder only	HOTENDS == 1
Preheat ABS 1	Preheat E1 (and bed)	HOTENDS >= 2
Preheat ABS End E1	Preheat E1 only	HOTENDS >= 2 && TEMP_SENSOR_BED
Preheat ABS 2	Preheat E2 (and bed)	HOTENDS >= 2
Preheat ABS End E2	Preheat E2 only	HOTENDS >= 2 && TEMP_SENSOR_BED
Preheat ABS 3	Preheat E3 (and bed)	HOTENDS >= 3
Preheat ABS End E3	Preheat E3 only	HOTENDS >= 3 && TEMP_SENSOR_BED
Preheat ABS 4	Preheat E4 (and bed)	HOTENDS >= 4
Preheat ABS End E4	Preheat E4 only	HOTENDS >= 4 && TEMP_SENSOR_BED
Preheat ABS 5	Preheat E5 (and bed)	HOTENDS == 5
Preheat ABS End E5	Preheat E5 only	HOTENDS == 5 && TEMP_SENSOR_BED

Control

The Control sub-menu includes the Temperature, Motion, and Filament sub-menus and Settings/EEPROM commands, plus a few other miscellanous hardware control commands.

Item	Description	Requirements
« Main		
Temperature »		
Motion »		
Filament »		
LCD Contrast »		HAS_LCD_CONTRAST
Retract »		FWRETRACT
Drive Strength »		DAC_STEPPER_CURRENT
BLTouch »		BLTOUCH
Store settings		EEPROM_SETTINGS
Load settings		EEPROM_SETTINGS
Restore failsafe	`M502` Settings to defaults	
Init EEPROM	`M502` + `M500` Default settings and store to EEPROM	

Temperature

Use this sub-menu to set the target temperature for nozzles and the bed, fan speed, `AUTOTEMP`, PID factors, and material preheat settings.

Item	Description	Requirements
« Control		
Nozzle: ---	Current E Target Temperature	HOTENDS == 1
Nozzle 1: ---	E_n_ Target Temperature...	HOTENDS >= 2
Nozzle 2: ---		HOTENDS >= 2
Nozzle 3: ---		HOTENDS >= 3
Nozzle 4: ---		HOTENDS >= 4
Nozzle 5: ---		HOTENDS == 5
Bed: ---	Bed Target Temperature	HAS_THERMALLY_PROTECTED_BED && WATCH_BED_TEMP_PERIOD > 0
Fan Speed: ---		FAN_COUNT == 1

Item	Description	Requirements
Fan Speed 1: ---		FAN_COUNT >= 2
Fan Speed 2: ---		HAS_FAN1
Fan Speed 3: ---		HAS_FAN2
Autotemp ON/OFF		AUTOTEMP && TEMP_SENSOR_0
Min: ---		AUTOTEMP && TEMP_SENSOR_0
Max: ---		AUTOTEMP && TEMP_SENSOR_0
Factor: ---		AUTOTEMP && TEMP_SENSOR_0
Pid P E1: ---		PIDTEMP && PID_PARAMS_PER_HOTEND && HOTENDS >= 1
Pid I E1: ---		PIDTEMP && PID_PARAMS_PER_HOTEND && HOTENDS >= 1
Pid D E1: ---		PIDTEMP && PID_PARAMS_PER_HOTEND && HOTENDS >= 1
Pid C E1: ---		PIDTEMP && PID_PARAMS_PER_HOTEND && HOTENDS >= 1 && PID_EXTRUSION_SCALING
Pid P E2: ---		PIDTEMP && PID_PARAMS_PER_HOTEND && HOTENDS >= 2
Pid I E2: ---		PIDTEMP && PID_PARAMS_PER_HOTEND && HOTENDS >= 2
Pid D E2: ---		PIDTEMP && PID_PARAMS_PER_HOTEND && HOTENDS >= 2
Pid C E2: ---		PIDTEMP && PID_PARAMS_PER_HOTEND && HOTENDS >= 2 && PID_EXTRUSION_SCALING
Pid P E3: ---		PIDTEMP && PID_PARAMS_PER_HOTEND && HOTENDS >= 3
Pid I E3: ---		PIDTEMP && PID_PARAMS_PER_HOTEND && HOTENDS >= 3
Pid D E3: ---		PIDTEMP && PID_PARAMS_PER_HOTEND && HOTENDS >= 3
Pid C E3: ---		PIDTEMP && PID_PARAMS_PER_HOTEND && HOTENDS >= 3 && PID_EXTRUSION_SCALING
Pid P E4: ---		PIDTEMP && PID_PARAMS_PER_HOTEND && HOTENDS >= 4
Pid I E4: ---		PIDTEMP && PID_PARAMS_PER_HOTEND && HOTENDS >= 4
Pid D E4: ---		PIDTEMP && PID_PARAMS_PER_HOTEND && HOTENDS >= 4
Pid C E4: ---		PIDTEMP && PID_PARAMS_PER_HOTEND && HOTENDS >= 4 && PID_EXTRUSION_SCALING
Pid P E5: ---		PIDTEMP && PID_PARAMS_PER_HOTEND && HOTENDS >= 5
Pid I E5: ---		PIDTEMP && PID_PARAMS_PER_HOTEND && HOTENDS >= 5
Pid D E5: ---		PIDTEMP && PID_PARAMS_PER_HOTEND && HOTENDS >= 5
Pid C E5: ---		PIDTEMP && PID_PARAMS_PER_HOTEND && HOTENDS >= 5 && PID_EXTRUSION_SCALING
Preheat PLA conf »		
Preheat ABS conf »		

Preheat PLA conf

The temperatures and fan speed set here will be used for the “Preheat PLA” menu item.

Item	Description	Requirements
« Control		
Fan Speed: ---		HAS_FAN
Nozzle: ---		
Bed: ---		TEMP_SENSOR_BED
Store settings	M500	

Preheat ABS conf

The temperatures and fan speed set here will be used for the “Preheat ABS” menu item.

Item	Description	Requirements
« Control		
Fan Speed: ---		HAS_FAN
Nozzle: ---		
Bed: ---		TEMP_SENSOR_BED
Store settings	M500	

Motion

The motion settings provide control over tunable movement parameters which can be stored to EEPROM.

Item	Description	Requirements
« Control		
Z Offset	M851 Z	HAS_BED_PROBE (with BABYSTEP_ZPROBE_OFFSET it babysteps)
Bed Z: ---	MBL Z Offset	MESH_BED_LEVELING && LCD_BED_LEVELING

Item	Description	Requirements
Feedrate »	Feedrate settings	
Acceleration »	Acceleration settings	
Jerk »	Jerk settings	
Steps/mm »	Steps/mm for XYZ axes and extruders	
Endstop abort ON/OFF		ABORT_ON_ENDSTOP_HIT_FEATURE_ENABLED

Feedrate

Item	Description	Requirements
« Motion		
Vmax X: ---	Max X Velocity (mm/s)	
Vmax Y: ---	Max Y Velocity (mm/s)	
Vmax Z: ---	Max Z Velocity (mm/s)	
Vmax E: ---	Max E Velocity (mm/s)	
Vmax E1: ---	Max E1 Velocity (mm/s)	DISTINCT_E_FACTORS
Vmax E2: ---	Max E2 Velocity (mm/s)	DISTINCT_E_FACTORS
Vmax E3: ---	Max E3 Velocity (mm/s)	DISTINCT_E_FACTORS && E_STEPPERS >= 3
Vmax E4: ---	Max E4 Velocity (mm/s)	DISTINCT_E_FACTORS && E_STEPPERS >= 4
Vmax E5: ---	Max E5 Velocity (mm/s)	DISTINCT_E_FACTORS && E_STEPPERS == 5
Vmin: ---	Min Feedrate (mm/s)	
VTrav min: ---	Min Travel Velocity (mm/s)	

Acceleration

Item	Description	Requirements
« Motion		
Accel: ---	Nominal Acceleration	
Amax X: ---	Max X Acceleration (mm/s^2)	
Amax Y: ---	Max Y Acceleration (mm/s^2)	
Amax Z: ---	Max Z Acceleration (mm/s^2)	
Amax E: ---	Max E Acceleration (mm/s^2)	
Amax E1: ---	Max E1 Acceleration (mm/s^2)	DISTINCT_E_FACTORS
Amax E2: ---	Max E2 Acceleration (mm/s^2)	DISTINCT_E_FACTORS
Amax E3: ---	Max E3 Acceleration (mm/s^2)	DISTINCT_E_FACTORS && E_STEPPERS >= 3
Amax E4: ---	Max E4 Acceleration (mm/s^2)	DISTINCT_E_FACTORS && E_STEPPERS >= 4
Amax E5: ---	Max E5 Acceleration (mm/s^2)	DISTINCT_E_FACTORS && E_STEPPERS == 5
A-retract: ---	Retract Acceleration (mm/s^2)	
A-travel: ---	Travel Acceleration (mm/s^2)	

Jerk

Item	Description	Requirements
« Motion		
Vx-Jerk: ---	Max X Jerk	
Vy-Jerk: ---	Max Y Jerk	
Vz-Jerk: ---	Max Z Jerk	
Ve-Jerk: ---	Max E Jerk	

Steps/mm

Item	Description	Requirements
« Motion		
Xsteps/mm: ---	X steps-per-mm	
Ysteps/mm: ---	Y steps-per-mm	
Zsteps/mm: ---	Z steps-per-mm	
Esteps/mm: ---	E steps-per-mm	
E1steps/mm: ---	E1 steps-per-mm	DISTINCT_E_FACTORS
E2steps/mm: ---	E2 steps-per-mm	DISTINCT_E_FACTORS
E3steps/mm: ---	E3 steps-per-mm	DISTINCT_E_FACTORS && E_STEPPERS >= 3
E4steps/mm: ---	E4 steps-per-mm	DISTINCT_E_FACTORS && E_STEPPERS >= 4
E5steps/mm: ---	E5 steps-per-mm	DISTINCT_E_FACTORS && E_STEPPERS == 5

Filament

Volumetric extrusion, Linear Advance K factor, and filament diameter per-extruder.

Item	Description	Requirements

« Control		
E in mm³ ON/OFF	Volumetric Units	
Advance K: ---		`LIN_ADVANCE`
Fil. Dia.: ---		`EXTRUDERS == 1` and volumetirc enabled
Fil. Dia. E1: ---		`EXTRUDERS >= 2` and volumetirc enabled
Fil. Dia. E2: ---		`EXTRUDERS >= 2` and volumetirc enabled
Fil. Dia. E3: ---		`EXTRUDERS >= 3` and volumetirc enabled
Fil. Dia. E4: ---		`EXTRUDERS >= 4` and volumetirc enabled
Fil. Dia. E5: ---		`EXTRUDERS == 5` and volumetirc enabled

BLTouch

When the ANTCLABS BLTouch probe acts up you can use the items in this sub-menu to reset and test the probe.

Item	Description	Requirements
« Control		
Reset BLTouch	Revive after an error	
BLTouch Self-Test	Run the built-in self-test	
Deploy BLTouch		
Stow BLTouch		

UBL Submenus

Unified Bed Leveling aims to be a comprehensive all-in-one system to calibrate the bed based on every available datapoint.

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