GRBL	Default	Structure	Description
$0	5	Step pulse time	Sets time length per step. Minimum 3 microseconds.
$1	100	Step idle delay	Sets a short hold delay when stopping to let dynamics settle before disabling steppers. Value 255 keeps motors enabled.
$2	0	Step pulse invert	Inverts the step signals (active low).
$3	1	Step direction invert	Inverts the direction signals (active low).
$4	7	Invert stepper enable pin(s)	Inverts the stepper driver enable signals (active low). If the stepper drivers shares the same enable signal only X is used.
$5	0	Invert limit pins	Inverts the axis limit input signals.
$7	0	Disable spindle with zero speed	Inverts the probe input pin signal.
$10	2047	Status report options	Specifies optional data included in status reports.
$11	0.05	Junction deviation	Sets how fast Grbl travels through consecutive motions. Lower value slows it down.
$12	0.002	Arc tolerance	Sets the G2 and G3 arc tracing accuracy based on radial error. Beware: A very small value may effect performance.
$13	0	Report in inches	Enables inch units when returning any position and rate value that is not a settings value.
$14	0	Invert control pins	Inverts the control signals (active low).
$15	3	Invert coolant pins	Inverts the coolant and mist signals (active low).
$16	1	Invert spindle signals	Inverts the spindle on, counterclockwise and PWM signals (active low).
$17	4	Pullup disable control pins	Disable the control signals pullup resistors. Potentially enables pulldown resistor if available.
$18	0	Pullup disable limit pins	Disable the limit signals pullup resistors. Potentially enables pulldown resistor if available.
$20	1	Soft limits enable	Enables soft limits checks within machine travel and sets alarm when exceeded. Requires homing.
$21	0	Hard limits enable	When enabled immediately halts motion and throws an alarm when switch is triggered. In strict mode only homing is possible after switch is triggered.
$22	1	Homing cycle	Enables homing cycle. Requires limit switches on all axes.
$23	7	Homing direction invert	Homing searches for a switch in the positive direction. Set axis bit to search in negative direction.
$24	600	Homing locate feed rate	Feed rate to slowly engage limit switch to determine its location accurately.
$25	800	Homing search seek rate	Seek rate to quickly find the limit switch before the slower locating phase.
$26	100	Homing switch debounce delay	Sets a short delay between phases of homing cycle to let a switch debounce.
$27	1	Homing switch pull-off distance	Retract distance after triggering switch to disengage it. Homing will fail if switch isn't cleared.
$28	0.1	G73 Retract distance	G73 retract distance (for chip breaking drilling).
$29	0	Pulse delay	Step pulse delay.
$30	1000	Maximum spindle speed	Maximum spindle speed. Sets PWM to maximum duty cycle.
$31	0	Minimum spindle speed	Minimum spindle speed. Sets PWM to minimum duty cycle.
$32	1	Mode of operation	Laser mode: consecutive G1/2/3 commands will not halt when spindle speed is changed. Lathe mode: allows use of G7, G8, G96 and G97.
$33	2000	Spindle PWM frequency	PWM frequency.
$34	0	Spindle PWM off value	PWM off value in percent (duty cycle).
$35	0	Spindle PWM min value	PWM min value in percent (duty cycle).
$36	100	Spindle PWM max value	PWM max value in percent (duty cycle).
$37	0	Steppers deenergize	Specifies which steppers not to disable when stopped.
$39	1	Enable legacy RT commands	"Enables ""normal"" processing of ?, ! and ~ characters when part of $setting or comment. If disabled then they are added to the input string instead."

$40	1	Limit jog commands	Limit jog commands to machine limits for homed axes.
$41	0	Parking cycle	Enable Safety Door
$42	1	Parking axis	Define which axis that performs the parking motion
$43	1	Homing passes	Number of homing passes. Minimum 1, maximum 128.
$44	3	Axes homing, first pass	Axes to home in first pass.
$45	0	Axes homing, second pass	Axes to home in second pass.
$46	0	Axes homing, third pass	Axes to home in third pass.
$56	1	Parking pull-out distance	Spindle pull out and plunge distance in mm. Incremental distance.
$57	1800	Parking pull-out rate	Pull out/plunge slow feed rate in mm/min.
$58	395	Parking target	Parking axis target. In mm, as machine coordinate [-max_travel,0].
$59	6000	Parking fast rate	Parking fast rate after pull out in mm/min.
$60	0	Restore overrides	Restore overrides to default values at program end.
$61	1	Safety door options	Enable this if it is desirable to open the safety door when in IDLE mode (eg. for jogging).
$62	0	Sleep enable	Enable sleep mode.
$63	3	Feed hold actions	Disable laser during hold.
$64	0	Force init alarm	Starts Grbl in alarm mode after a cold reset.
$70	31	Network Services	Network services to enable. Consult driver documentation for availability. NOTE: A hard reset of the controller is required after changing this setting.
$73	3	WiFi Mode	WiFi Mode. None, Client Station (STA), Access Point (AP)
$74	My_SSID	WiFi Station (STA) SSID	WiFi Station (STA) SSID.
$75	***********	WiFi Station (STA) Password	WiFi Station (STA) Password.
$76	OLM3_AP_A2FA	WiFi Access Point (AP) SSID	WiFi Access Point (AP) SSID.
$77	12345678	WiFi Access Point (AP) Password	WiFi Access Point (AP) Password.
$100	100	X-axis travel resolution	X-axis travel resolution in steps per millimeter.
$101	100	Y-axis travel resolution	Y-axis travel resolution in steps per millimeter.
$102	100	Z-axis travel resolution	Z-axis travel resolution in steps per millimeter.
$110	20040	X-axis maximum feed rate	X-axis maximum rate. Used as G0 rapid rate.
$111	20040	Y-axis maximum feed rate	Y-axis maximum rate. Used as G0 rapid rate.
$112	600	Z-axis maximum feed rate	Z-axis maximum rate. Used as G0 rapid rate.
$120	2000	X-axis acceleration	X-axis acceleration. Used for motion planning to not exceed motor torque and lose
$121	1800	Y-axis acceleration	Y-axis acceleration. Used for motion planning to not exceed motor torque and lose
$122	200	Z-axis acceleration	Z-axis acceleration. Used for motion planning to not exceed motor torque and lose
$130	400	X-axis maximum travel	X-axis Maximum travel distance from homing switch. Determines valid machine space for
$131	400	Y-axis maximum travel	Y-axis Maximum travel distance from homing switch. Determines valid machine space for
$132	100	Z-axis maximum travel	Z-axis Maximum travel distance from homing switch. Determines valid machine space for
$140	600	X-axis motor current	X-axis Motor current in mA (RMS).
$141	1000	Y-axis motor current	Y-axis Motor current in mA (RMS).
$142	800	Z-axis motor current	Z-axis Motor current in mA (RMS).
$150	16	X-axis microsteps	X-axis Microsteps per fullstep.
$151	16	Y-axis microsteps	Y-axis Microsteps per fullstep.
$152	16	Z-axis microsteps	Z-axis Microsteps per fullstep.
$160	0	X-axis backlash compensation	X-axis Backlash compensation, mm. This sets the backlash compensation for each axis in mm.
$161	0	Y-axis backlash compensation	Y-axis Backlash compensation, mm. This sets the backlash compensation for each axis in mm.
$162	0	Z-axis backlash compensation	Z-axis Backlash compensation, mm. This sets the backlash compensation for each axis in mm.
$180	20040	X-axis maximum rapid rate	X-axis Maximum rapid rate. Used as G0 rapid rate.
$181	14028	Y-axis maximum rapid rate	Y-axis Maximum rapid rate. Used as G0 rapid rate.
$182	600	Z-axis maximum rapid rate	Z-axis Maximum rapid rate. Used as G0 rapid rate.
$200	65	X-axis StallGuard4 fast threshold	X-axis StallGuard threshold for fast (seek) homing phase.
$201	50	Y-axis StallGuard4 fast threshold	Y-axis StallGuard threshold for fast (seek) homing phase.
$202	60	Z-axis StallGuard4 fast threshold	Z-axis StallGuard threshold for fast (seek) homing phase.
$210	100	X-axis hold current	X-axis Motor current at standstill as a percentage of full current.

$211	100	Y-axis hold current	Y-axis Motor current at standstill as a percentage of full current.
$212	100	Z-axis hold current	Z-axis Motor current at standstill as a percentage of full current.
$220	50	X-axis StallGuard4 slow threshold	X-axis StallGuard threshold for slow (feed) homing phase.
$221	60	Y-axis StallGuard4 slow threshold	Y-axis StallGuard threshold for slow (feed) homing phase.
$222	60	Z-axis StallGuard4 slow threshold	Z-axis StallGuard threshold for slow (feed) homing phase.
$270	2000000	Uart baudrate	Value range - 9600~2000000. After the Settings are complete, you need to manually restart the machine
$271	2000000	Uart baudrate	Value range - 9600~2000000. After the Settings are complete, you need to manually restart the machine
$272	2000000	Uart baudrate	Value range - 9600~2000000. After the Settings are complete, you need to manually restart the machine
$300	OLM3_STA_A2FA	Hostname	Network hostname. NOTE: A hard reset of the controller is required after changing this setting.
$301	1	IP MODE	IP Mode.
$302	192.168.5.1	IP Address	Static IP address. NOTE: A hard reset of the controller is required after changing this setting.
$303	192.168.5.1	Gateway	Static gateway address. NOTE: A hard reset of the controller is required after changing this setting.
$304	255.255.255.0	Netmask	Static netmask. NOTE: A hard reset of the controller is required after changing this setting.
$305	23	Telnet port	(Raw) Telnet port number listening for incoming connections. NOTE: A hard reset of the controller is required after changing this setting.
$306	80	HTTP port	HTTP port number listening for incoming connections. NOTE: A hard reset of the controller is required after changing this setting.
$307	81	Websocket port	Websocket port number listening for incoming connections. NOTE: A hard reset of the controller is required after changing this setting.NOTE: WebUI requires this to be HTTP port number + 1.
$308	21	FTP port	FTP port number listening for incoming connections. NOTE: A hard reset of the controller is required after changing this setting.
$310	OLM3_AP_A2FA	Hostname (AP)	Network hostname. NOTE: A hard reset of the controller is required after changing this setting.
$312	192.168.5.1	IP Address (AP)	Static IP address. NOTE: A hard reset of the controller is required after changing this setting.
$313	192.168.5.1	Gateway (AP)	Static gateway address. NOTE: A hard reset of the controller is required after changing this setting.
$314	255.255.255.0	Netmask (AP)	Static netmask. NOTE: A hard reset of the controller is required after changing this setting.
$330	admin	Admin Password	WebUI Administrator password.
$331	user	User Password	WebUi User password.
$332	255	Wifi Reconnect	Set Wifi Recoonect Times
$339	3	Sensorless homing	Enable sensorless homing for axis. Requires SPI controlled Trinamic drivers.
$341	0	Tool change mode	Normal: allows jogging for manual touch off. Set new position manually. Manual touch off: retracts tool axis to home position for tool change, use jogging or $TPW for touch off. Manual touch off G59.3: retracts tool axis to home position then to G59.3 position for tool change, use jogging or $TPW for touch off. Automatic touch off G59.3: retracts tool axis to home position for tool change, then to G59.3 position for automatic touch off. All modes except Normal and Ignore M6 returns the tool (controlled point) to original position after touch off.
$342	30	Tool change probing distance	Maximum probing distance for automatic or $TPW touch off.

$343	30	Tool change locate feed rate	Feed rate to slowly engage tool change sensor to determine the tool offset accurately.
$344	180	Tool change search seek rate	Seek rate to quickly find the tool change sensor before the slower locating phase.
$345	200	Tool change probe pull-off rate	Pull-off rate for the retract move before the slower locating phase.
$384	0	Disable G92 persistence	Disables save/restore of G92 offset to non-volatile storage (NVS).
$392	5	Spindle on delay	Delay to allow spindle to spin up after safety door is opened.
$393	3	Coolant on delay	Delay to allow coolant to restart after safety door is opened.
$600	0	Power log enable	Whether to enable the main power supply power supply debugging information.
$601	5	Voltage offset	Maximum voltage offset allowed for the main power supply.
$602	0	Device Auto Poweroff Time	Auto Power Off in Minutes
$603	5	Shock detection alarm threshold	Value range: 0~1000, The Recommended value = 3, If the alarm threshold for shock detection is set to 0, the function is disabled.
$604	6	Skew detection alarm threshold	Value range: 0~1000, The Recommended value = 4, If the alarm threshold for skew detection is set to 0, the function is disabled.
$605	1	Buzzer Function	Enable/Disable buzzer function. Defaul Enabled 1
$606	1	Homing upon power up enable	Homing upon power up
$607	0	Report echo line received enable	Debug function - Report echo line received enable.
$608	1	Return Line number enable	Return Line number enable
$609	10	Homing switch seek pull-off distance	Homing seek pull-off distance
$610	0	Default Language	Set the firmware language (0=EN 1=ZH_CN 2=ZH_HK)
$611	0	Auto Power On	Enable auto-poweron function
$612	1	Webui auth enable	Enable webui auth function
$613	86915	Laser Running Time	The length of time the laser has been used. Persistent Data
$614	0	Safety door enable	Enable safety door function
$615	api.ortur.cn	Service website	Service Domain for Automatic Firmware Updates, the default for api.ortur.cn
$622	111	Homing cycle	Enables homing cycle. Requires limit switches on axes to be automatically homed. When `Enable single axis commands` is checked single axis homing can be performed by $H<axis letter> commands. When `Allow manual` is checked, axes not homed automatically may be homed manually by $H or $H<axis letter> commands. `Override locks` is for allowing a soft reset to disable `Homing on startup required`.