

## **Geeetech A20M 3D Printer**

# User Manual (v2.0)





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### **1** Attention

### **1.1 Safety instructions**

• Please switch to the correct local voltage (110V-220V) before turning on the printer. Be sure the switch is in the correct position or it will damage the power supply unit (PSU).



- Be sure all wires are correctly connected before turning on the printer.
- Don't touch the extruder head or hot bed when printing as they generate high temperature which may cause burn.
- Don't leave the printer unattended when printing.

### **1.2 Factory test before delivery**

In order to ensure the quality, each printer is tested in the factory before delivery. As a result, there may be residue in the extruder head or on the hot bed, but it should not affect normal use. We provide the spare nozzle in the accessory kit just in case.



## 2 Printer display



(Picture 2-1)



(Picture 2-2)



(Picture 2-3)



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(Picture 2-4)

- 1. Gantry frame
- 2. LCD12864 screen
- 3. Knob
- 4. Reset button
- 5. Y axis
- 6. Base
- 7. Z axis end stop
- 8. X axis end stop
- 9. Filament spool holder
- 10. Teflon tube
- 11. Extruder head
- **12.** Hot bed
- 13. X axis motor
- 14. Z axis motor
- 15. Y axis motor
- 16. PSU switch
- 17. Y axis end stop
- 18. Extruder (2 sets)
- 19. Extruder wire connector
- 20. USB port
- 21. Power switch
- 22. Power socket
- 23. SD card slot



Please check the accessories first when you've received the printer (Refer to picture 2-5). If missing any spare part, please contact your sales representative.



(Picture 2-5)

## **3 Assembling**

### 3.1 Assembling the main frame

The main frame consists of the gantry frame and the base, extruders, spool holder, and screws. See picture (3-1).





• Assemble the gantry frame and base from bottom to top with 4 M5x35 screws and 4 M5 spring washers. See picture (3-2).



(Picture 3-2)

• Assemble and fix the two sets of extruder units to the back side of the top gantry as shown in picture (3-3).





• Fix the spool holders to the top gantry with 2 M3x6 screws and 2 M3 T-shape nuts. Details see picture (3-4).



### 3.2 Wire connection

• Insert the two Teflon tubes into the quick-insert connector of the two extruders respectively. Details see picture (3-5).





(Picture 3-5)

• Plug the extruder cables into the molex socket of the extruder head extension board firmly. See picture (3-6).



(Picture 3-6) Connect the motor wires of E0 and E1. See picture (3-7).



(Picture 3-7) Connect the wires of X axis' motor and end stop. See picture (3-8).



(Picture 3-8) Connect the wires of Y axis' motor and end stop. See picture (3-9).



(Picture 3-9)Connect the wires of Z axis' motor and end stop. See picture (3-10).



(Picture 3-10)

### 3.3 Check the power input mode

The factory default voltage is 220V. You need to choose the correct voltage according to your local standard requirement. See picture (3-11)

Note: Be sure the voltage is switched to the correct one.



(Picture 3-11)



### 3.4 Check the filament

Put the filament on the spool holder. Please pay attention to the feeding direction of the filament. See picture (3-12).





Since the filament is bent, the first section of it needs to be straightened by hand and trimmed to make it easier to insert the filament into the feeder. Press down the lever handle of the extruder and insert the filament into the feeding tube until it reaches the extruder head. See picture (3-13).





(Picture 3-13)

When print PLA, set the target nozzle temperature about 180-210  $^{\circ}$ C. When the temp is stable, control the extruder filament feeding on LCD screen ("Move axis"), feed until there is molten material flowing from the nozzle.

Observe the nozzle, if there is no filament stuck and the filament is coming out smoothly, then stop filament feeding, clear the nozzle with tweezers. See picture (3-14).



(Picture 3-14)



### 4.1 Level the print bed

The first layer is key to a successfully printed model. The factory default setting is a little high in order to avoid scratching the hotbed with the nozzle, so users need to adjust the distance between nozzle and hotbed again. After the first-time bed leveling, users may need to level the bed again in future.

Rough leveling

Home the printer first (Prepare> Auto home), then it shows the option "Level corners" on the LCD screen. Put a piece of A4 paper on the platform, click "Next corner", the extruder head moves counterclockwise from the bottom left corner to the four corners of the platform. See picture (4-1, and 4-2).

Main	t
Move axis	+
Auto home	
Level corners	
Disable steppers	
(Picture 4-1)	
Next corner	
Back	

#### (Picture 4-2)

When the extruder head moves to the left bottom, adjust the corresponding knob until the distance between the nozzle and bed is about the thickness of a piece of paper (about 0.1-0.2mm). Slide the paper back and forth to see if you feel a slight resistance. If yes, it means the leveling of this corner is finished and you can proceed to level the rest corners with the same method. See picture (4-3).



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(Picture 4-3)

Accurate leveling

If you level the bed with A4 paper, the first layer maybe too high, too low or moderate.

a. Too high: the distance between the nozzle and bed is too far, which may cause the filament to not stick or not stick well. See picture (4-4).



(Picture 4-4)

b. Too low: the distance between the nozzle and the bed is too close, which prevents the filament from coming out and causes the extruder gear to click, and even worse, scratch the nozzle on the bed. See picture (4-5).



(Picture 4-5)

c. Moderate: Extrude the filament properly and evenly stick on the bed. See picture (4-6).



(Picture 4-6)

In the case of too low and too high, adjust the knobs under the platform till they are moderate. It may take some trial and error to achieve the best result. An example of good first layer, see picture (4-7).



(Picture 4-7)

Note:

- If turn the knobs clockwise, the platform will rise, and vice versa.
- Avoid the nozzle touching the bed; use a piece of A4 paper. Or it will scratch the bed.

For more details, please refer to this link:

http://geeetech.com/forum/viewtopic.php?f=112&t=62296

### 4.2 SD card printing

Insert the SD card into the slot. See picture (4-8).



(Picture 4-8)

Press and rotate the knob to enter the main menu. Select the option of "Print from SD". See picture (4-9).



(Picture 4-9)

Choose the files in the SD card. See picture (4-10).



(Picture 4-10)

The printer will heat automatically. See picture (4-11).





When heating done, the printer will start printing. See picture (4-12, 4-13).



(Picture 4-13)



### **5** Introduction to the LCD menu

### 5.1 Tree diagram



(Picture 5-1)



### 5.2 Main functions

#### LCD rotating knob:

- Press the knob: Confirm or enter the next menu.
- Rotate the knob: Roll the select options or change parameters.

#### LCD homepage, see picture (5-2):

- 1. Extruder temperature: Current temp/target temp
- 2. Hot bed temperature: Current temp/target temp
- 3. Extruder head blower status
- 4. Current Z axis value
- 5. Printing process
- 6. Current printing info
- 7. Feed rate: Current printing speed
- 8. Mix-color printing ratio: E0; E1%



#### (Picture 5-2)

**Note:** Rotating the knob can change the printing feed rate during printing. We suggest users not changing the feed rate too much or it will cause the motors to skip and affect the print quality.

#### Press the knob to enter the next menu (Picture 5-3, 5-4):

- Prepare: Prepare and test the printer before normal operation
- Control: Printer temp and motion parameter setting
- Mixer: Mix-color ratio setting
- Print from SD: SD card printing
- About Printer: The printer info



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(Picture 5-3)

Prepare	+
Control	+
Mixer	+
Print from SD	+
About Printer	+



#### The main functions of Prepare menu (Picture 5-5, 5-6):

- Move axis: Move X/Y/Z axis and Extruder
- Auto home: X/Y/Z axis auto homing
- Disable steppers: Unlock motors
- Change filament: Change filament
- Preheat PLA: Manually pre-heat the hot bed and extruder before printing PLA.
- Preheat ABS: Manually pre-heat the hot bed and extruder before printing ABS.

	-
Main	1
Move axis	+
Auto home	
Disable steppers	
Change filament	

(Picture 5-5)



(Picture 5-6)

#### The main functions of Control menu (Picture 5-7, 5-8):

- Temperature: Change the temp of the hot bed and extruder in real time during printing. Customize the temp of preheat PLA and preheat ABS.
- Motion: Motion parameter setting in firmware. After modification, choose "store memory" to save the change.
- Filament: Open or close filament detector; set filament diameter.
- Store settings: Save the parameters modified.
- Load settings: If you need to restore to the original settings, please choose this option.
- Restore failsafe: Restore factory setting.
- Initialize EEPROM: Initialize printer Settings







(Picture 5-8)



#### The main functions of Mixer menu:

Mx: Fixed mix ratio, see picture (5-9).



(Picture 5-9)

 $Mx^{\wedge}$ : Automatically change mix ratio, see picture (5-10).





Mixer menu offers two mix-printing options, namely fixed mix ratio printing and variable mix ratio printing. The detailed operation steps for your reference:

#### Set fixed mix ratio

Choose "Mixer" and press the knob. Rotate the knob to choose "Mix: 100; 0%". Adjust the mix ratio and press the knob to confirm. See picture (5-11, 5-12, and 5-13).



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(Picture 5-11)



(Picture 5-12)





**"Toggle mix"**: If you need to quickly switch the ratio between E0 and E1, you can select this function to switch, see picture (5-14)



(Picture 5-14)

#### Set variable mix ratio

First, you need to get the current z-axis coordinate, which can be found on the screen, details see picture (5-15).





Choose "Gradient" to set the variable mix ratio, details see picture (5-16).





"Gradient mix": Adjust the filament ratio of E0 and E1. See picture (5-17and 5-18).



(Picture 5-18)

**"start Z"**: The starting position (z-axis height) of automatic change of mixing; automatically change the mix based on the current Z height obtained in the previous step.

"end Z": The end of automatic change of mixing (z-axis height).

Choose "start z" and "end z", press and rotate the knob to set the starting and ending position of mixing. See picture (5-19).



(Picture 5-19)

#### Test the motors' function via LCD

Press the knob to enter the next menu; choose "Prepare". See picture (5-20).



(Picture 5-20)

Choose "Auto home" to home the printer, see picture (5-21).

Main	t
Move axis	+
Auto home	
Disable steppers	
Preheat PLA	+
	1.1.1

#### (Picture 5-21)

Choose "Move axis" to move motors. See picture (5-22)

Main				t
Move	axi	s		÷
Auto	hom	ie 👘		
Leve	1 co	nner	s	
Disa	ble	step	pers	

(Picture 5-22)

Choose from **"Move X/Y/Z/Extruder1/Extruder2"** and rotate the knob to move them. See picture (5-23).



(Picture 5-23)

Choose "Move 1mm", see picture (5-24).

-		
	Move X	
Move	axis	Ĵ
Move	10mm	+
Move	1mm	+
Move	O.1mm	+

(Picture 5-24)

**Note:** we suggest using 1mm to test X/Y/Z axis.

After axis' testing finished, if you want to unlock the motor, choose **"Prepare>Disable steppers"**, see picture (5-25).



(Picture 5-25)

When the motors are unlocked, you can move them by hand.





### **6** Software setting

### 6.1 Install driver

Two printing choices for A20M: SD card printing and USB printing.

**SD card printing:** After leveling, insert the SD card into the slot, and choose a .gcode file to start printing.

**USB printing:** Connect the printer and computer with a USB cable to control the printer with slicing software such as Repetier-Host, Cura, Simplify3D, Slic3r, etc. Because of some unstable factors such as signal interference, the USB printing prone to fail. So we suggest choosing SD card printing.

The details of USB printing are as follows:

Firstly, turn on the printer, and connect the printer to computer with a USB cable. Normally, the computer will automatically search the install driver. The newest communication chip of A20M is CH340. See picture (6-1).



(Picture 6-1)

If it fails to automatically install the driver in computer, then check whether the driver is installed successfully or not. Click to choose **"My computer>Property>Device manager"**.

If it shows the exclamation mark as picture below (6-2), then you need manually install the driver.



🔒 Device Manager File Action View Help 🗢 🔿 🗖 🛛 🖉 💭 > 4 Audio inputs and outputs > 💻 Computer > 👝 Disk drives > 🄙 Display adapters > 🖓 Human Interface Devices > 🖷 IDE ATA/ATAPI controllers > 🔤 Keyboards > II Mice and other pointing devices > 💻 Monitors > 🚅 Network adapters ✓ <sup>™</sup> Other devices 🙀 USB Serial Port Ports (COM & LPT) > > 📇 Print queues > 
Processors Software devices > 🐐 Sound, video and game controllers > 🍇 Storage controllers > 🍢 System devices > 🏺 Universal Serial Bus controllers

(Picture 6-2)

Download link for CH340:

https://www.geeetech.com/index.php?main\_page=download&download\_id=40

After the driver is installed, check the "Device manager" and see if it is same as the picture below (6-3). If so, it means the driver is successfully installed.





### 6.2 Install slicing software

Repetier-Host is the default slicing software here. Download address: <a href="https://www.repetier.com/download-software/">https://www.repetier.com/download-software/</a>

#### • Set printer parameters

When Repetier-Host is installed, turn on the printer and open the Repetier-Host. Repetier-Host supports several languages. You can choose your native language from **Config>Language** (Picture 6-4 for details).



(Picture 6-4)

English interface for your reference (picture 6-5).

(Picture 6-5)



Using the Repetier-Host for the first time, printer parameters need to be configured before connecting. Click **"Printer settings"** on the top right corner, see picture (6-6).



(Picture 6-6)

It pops up the content as the picture below (6-7). Write down the relevant info accordingly. (Pay attention to the highlighted parts)

a. Connection dialog:

Printer Setting	s						
Printer:	Geeete	ch A20M				•	
Connection	Printer	Extruder	Printer Sh	ape So	ripts Ad	vanced	
Connector:	Seri	al Connectio	n	•		[	Help
Port:		C0M5	•				
Baud Rate:		250000	•	]			
Transfer Pr	otocol:	Autodetect	-				
Reset on Em	ergency	Send emerge	ency comman	<u>d and</u> re	connect	-	
Receive Cac	he Size:	127					
Communicati	on Timeo	ut:)		[s]	]		
🗌 Use Ping	-Pong Co	mmunication (	(Send only	after ok	)		
are stored	with eve	ry OK or app.	ly. To crea	te a nev	printer,	ter at the top. just enter a r he last setting	Lew
1							
					OK	Apply	Cancel

(Picture 6-7)



b. Printer dialog (Picture 6-8):

Printer Setting	s						
Printer:	Geeetech	1 A20M				• ī	<u>.</u>
Connection	Printer	Extruder	Printer Sh	nape Scrip	ts Advanced		
Firmware T	уре:		Autodet	ect		•	
Travel Fee	d Rate:		4800		[mm/min]		
Z-Axis Fee	d Rate:		100		[mm/min]		
Manual Ext	rusion Spe	ed:	2		20	[	mm/s]
Manual Ret	raction Sp	eed:	30		[mm/s]		
Default Ex	truder Tem	perature:	200		°c		
Default He	ated Bed 1	emperature	: 55		°c		
	temperatu y 3 second ion: X: A to print Extruder Motors af p. Printin	0 er display after Job/Ki ter Job/Ki] g Time 8	from Log Y: 0 Kill .1 [%]	🗹 Di s	to Park Posit able Heated E nter has SD c	ed after card	
Invert DIF	collon III	ooncrors ry	<u>,                                    </u>			. [] fli	ւթռասու
			,	ОК	AD	plv	Cancel

(Picture 6-8)

### c. Extruder dialog (Picture 6-9):

Printer Setting	s						
Printer:	Geeetecl	n A20M				· i	<u> </u>
Connection	Printer	Extruder	Printe	r Shape   S	cripts A	lvanced	
Number of Number of			2	÷			
Max. Extr	uder Tempe	erature:	280				
Max. Bed	Temperatur	e:	120				
Max. Volu	ne per sed	ond	12		[mm³/s]		
🗹 Printe	r has a Mi	ixing Extru	der (one	e nozzle fo:	r all colo:	rs)	
-Extruder 1 Name:	EO		]				
Diameter: Color:	0.4		] [mm] T	emperature	Offset:	0	[° c]
Offset X:	0		] 0	ffset Y:		0	[mm]
-Extruder 2 Name:	E1		]				
Diameter:	0.4		[mm] T	emperature	Offset:	0	[° C]
Color:							
Offset X:	0		0	ffset Y:		0	[mm]
					OK	Apply	Cancel

(Picture 6-9)



d. Printer shape dialog (Picture 6-10):

Printer Settings			
Printer: Geeete	ech A20M		• 💼
Connection Printer	r Extruder Printer S	hape Scripts Advanced	
Printer Type: C	lassic Printer	-	^
Home X: −15	Ноте ¥: —8	Home Z: O	
X Min O	X Max 255	Bed Left: 0	
YMin O	¥ Мах 255	Bed Front: 0	
Print Area Width:	255	 mm	
Print Area Depth:	255	mm	
Print Area Height:	255	mm	
These coordinates coordinates coordinates coordinates control of the theorem of the second se	an be negative and outs: he coordinates where th	range of extruder coordina de the print bed. Bed e printbed itself starts. By we the origin in the center	y
X Max		E	
		1	×
		OK Apply	v Cancel

(Picture 6-10)

Now the printer parameters are set.

Note: The baud rate is still 250000.

• Set slicing parameters

After setting the printer parameters, click **"Connect"** on the top left corner. The color of the icon changed to green means the printer connects to the Repetier-Host successfully. Click it again to disconnect. See picture (6-11).



(Picture 6-11)


After successfully connected, choose **"Slicer> CuraEngine"** and open the configuration menu. See picture (6-12).

Object Placemen	t Slicer Print Previ	ew   Manual Control   SD Card
0	Slice with C	CuraEngine
Slicer: Cura	Engine	▼ 〔♪ Manager
1 Print Settings:		Configuration
Print Configura	tion: efem1+	2
Adhesion Type:	None	
Quality:	0.2 mm	
Support Type:	None	•
Speed:	Slow Print Speed:	Fast 45 mm/s
Infill Density	Outer Perimeter Spea Infill Speed:	≥d: 38 mm/s 71 mm/s 20%
🗹 Enable Cooli	ng	
Filament Setting	IS:	
Extruder 1:	Default	
	arate, external program develo ttps://www.ultimaker.com	ped by David Braam. For more

(Picture 6-12)

It pops up dialog as picture below (6-13):

Appetier-Host V2.1.3	– ø ×
File View Config Printer Tools Help	_
Connet   Lad   top Famerat Tavel	Printer Settings Easy Mode Emergency Step
30 Yes Tangerature Curve Curve	Object Placement Sliver Print Preview Manual Control SD Card
CuraEngine Settings Com	Slice with CuraEngine
Isfalt C See C See 📋 Balats	Slicer: CuraEngine • 🕥 Manager
C Input C Input	Configuration
Speed and Guality Structures Extrusion O-Codes Advanced	Print Settings:
Speed Slaw Fast	Print Configuration: efault .
Print: 40 00 [sa/s]	Adhenion Type: Bins .
Trend:         160         (m/s)           First Law:         20         (m/s)	Quality: 0.2 mm
First Laws:         0         50         [mer/s]           Other Perioder         30         60         [mer/s]	Support Type: Bins .
Openant         Openant <t< td=""><td>Speed:</td></t<>	Speed:
7.nfill: [60] 100 [6w/4]	Slow Fast
fbin Infill: 90 00 [sevin]	Print Speed: 45 mm/s Outer Perimeter Speed: 38 mm/s
(wality     Jefail Quality: 0.2 m	Infill Speed: 71 mm/s Infill Density 20%
Control Contro	Znable Cosling
Twee Date of the Control of the Cont	Filament Settings:
Layer Height: 0.2 [ms]	
↓ First Lever Neight: 0.3 [ne]	Extroder 1: Default .
O     O     First Lever Betrasion Width. [00     [9]	CuraEngine is separate, external program developed by David Braam. For more informations visit https://www.ultimaker.com
	<b>_</b>
L Der in Leg: ∰ Consude ∰ Infes ∰ Warings ∯ Arrors ∰ ACL ∰ Asto Sorall 🏦 Clear Leg 🕥 Copy	
14:12:37.653 OpenGL version:4.3.0 - Build 20.19.15.4835	^
111277.153 OpenGL extensions:GL_RT_blend_minnas GL_RT_blend_mbtract GL_RT_blend_mobr GL_RT_texture3D GL_RT_tip_rolume_hint GL_RT_compiled_vertex_erray GL_SGIS_texture_edge_cl	lamp GL_SGIS_generate_mipmap GL_EXT_draw_range_elements GL_v
Disconnected: Geetech A10	Idle

#### (Picture 6-13)

Printer parameters are important to print quality. Customers need to run tests to find the best parameters for their printers. Here we provide a configuration file for your reference ("Geeetech A20M PLA high.rcp"). You can import it according to the steps as follows. The following is an example of parameters for PLA (Picture 6-14):



Repetier-Host V21.3		- ø ×
File View Config Printer Tools Help		
Conset   Led   Lig Flammet Terel		Printer Settings Easy Mode Emergency Stop
39 Ties Tongersture Curre Curre	Object Placement	Sliver Print Preview   Manual Control   SD Card
CuraEngine Settings		
Print Filament		Slice with CuraEngine
Befault • C Save C Save as 🔒 Dalate		
C Loyert C Expert	Slicer: Curalin	agine • 💮 Manager
Speed and Quality Structures Latrunian OrCodes Advanced		🗇 Configuration 🇥
Speed	Print Settings:	
Ster         Fast           00         00         (m/s)	Print Configuration	m'efeelt ·
Trank: 190 [150 [aw]	Quality:	0.2 m
First Layer: 30 30 [m/s]	Support Type:	Nene ·
0uter Periseter 20 60 [ma/s]		
LDAR Periseter 40 80 [ma/s]	Speed:	
Indill:         60         100         (m/s)           Sin Indill:         50         6m/s         (m/s)	· ·	Slov Fast Print Speed: 45 mm/s Outer Furineter Speed: 38 mm/s
anna anna. au anna. au anna anna anna an		Infill Speed: 71 mm/m
Befenit Goality: 0.2 am ·	Infill Density	208
Dread School de audity Setting	Zaable Cooling	
Image: The set of the	Filament Settings:	
First Lower Height: [0.3 [66]]	Extruder 1:	Default
First Layer Extrains Width [50]     [8]	CuraEngine is separat	ne, external program developed by David Braam. For more
	informations visit https	s://www.ultimaker.com

(Picture 6-14)

It pops up the dialog as below (Picture 6-15). Choose "Geeetech A20M PLA high.rcp" and open it.

left Open												×
← → • ↑ <mark> </mark> •	This PC	> Local Disk (E:) → Config >	Repetier Hos	st → Geeetech A20	M Repetier-Host_V	/2.1.3 Cur	a配置文件	ڻ ~	Search Geeetec	n A20M R	epeti	P
Organize 🔻 New f	older											?
> 🧥 OneDrive	^ Na	ame	_	Date modified	Туре		Size					
> 🛆 WPS网盘		Geeetech A20M PLA high.rcp		2/2/2019 14:24	RCP File		3 KB					
🗸 💻 This PC			<b>N</b>									
> 🧊 3D Objects												
> 📃 Desktop												
> 🔮 Documents												
> 🕂 Downloads												
> 🁌 Music												
> 📰 Pictures												
> 📑 Videos												
> 🏪 Local Disk (C:)												
> 👝 Local Disk (D:)												
> 👝 Local Disk (E:)												
> 👝 Local Disk (F:)												
> 💣 Network												
	~											
Fi	le name:	Geeetech A20M PLA high.rcp							Repetier-Cura-	Print-Sett	ings	$\sim$
									Open	] 0	ancel	



Now, the configuration file is imported, click "Save". See picture (6-16).



Repetier-Host V2.1.3	-	σ×
File View Config Printer Tools Help		
Connect   Load   Ling Filament Travel	لامین Printer Settings Eary Mode E	47 Emergency Stop
30 View Tengersture Curve Curve	Object Placement Slicer Print Preview Manual Control 1	
CuraEngine Settings		
Print Filament	Slice with CuraEngine	
Geestech A20M PLA high	• 🕝 Save 💽 Save as 💼 Delete Slicer: Duralngine • 😥	Manager
	C Inport C Inport	
Speed and Quality Structures Extrusion O-Codex Advanced	Print Settings:	-stim
-Speed Slow Fast	Print Configuration effort	
Print:         40         60         [savs]	Adhenion Type: Hone ·	
Travel: 100 [m/x]	Quality: 0.2 mm	
First Layer:         30         30         (an/s)	Support Type: None *	
Outer Periseter         30         60         [sss/s]           Inner Periseter         40         80         [sss/s]		
Index Perieeter 40 00 100 100/51 Infill: 60 100 (m/s)	Speed:	Fast
Skin Infill: 30 60 [m/s]	Print Speed: 50 ms/s Otter Perimeter Speed: 45 ms/s	
Quality	Infill Speed: 80 mm/s	
Default Quality: PLA high -	Infill Benaity	208
Selected Quality Setting	M Enable Cooling	
T Fane: Pla high	Filament Settings:	
Layer Neight:         0.1         [se]		
	Extroder 1: Defualt	•
⊙ ⊙ Prit Laper Estression vidia: 205 (%)	CuraEngine is separate, enternal program developed by David Braam. For m informations visit https://www.ubimaker.com	540
Show in Log: 🛞 Commands 🌒 Infos 🌒 Farnings 🌒 Errors 🌒 ACK 🌒 Auto Scroll 💼 Clear Log 🕥 Copy		
15:18:31.974 OpenGL renderer:Intel(N) HD Graphics 4400 15:18:31.974 Using fast VBOs for rendering is possible		^
		~

(Picture 6-16)

Click "Filament>Import", see picture (6-17).

30 View   Temperature Cu	e Cers	Object Placement Slicer Print Preview Manual Control SD Card
CuraEngine S	tings Core	Slice with CuraEngine
Default Filment	1 C See C See and C See a C	Slicer: Curalagine . 🔅 Munager
Filment Disseter:	1.8 [m]	Configuration
Flow:		Print Configuration: efcult
Temperature	2010 - 20	Adhesion Type: Hone -
Print Temperature:	210 [* C]	Quality: 0.2 mm
Bed Temperature:	80 (* C)	Support Type: None .
Cooling		Speed:
Min. Fan Speed:	80 (s)	Slov Fast
Max. Fan Speed:	100 [s]	Print Speed: 45 mm/s Outer Parimeter Speed: 38 mm/s
Minisum Layer Time:	6 [s]	Infill Speed: 71 mm/s 205
set in the start gro	ts an attribut dimetre al flor rine, herman i aurona i duting attribut. H synches y sulli "attribut rine vite vite differant rines. In rine from the first startabe we used for all. Frint temperatures we a swing different temperatures for different saterials i as product. For could be higher takes of all uterators we used	⊠ Inable Cooling Filament Settings:
		Extroler 1: Defuelt .
		GoodSopper is spearer, evenuel program developed for David Dawn. For now internation, with https://www.ukinade.com
-		

(Picture 6-17)

It pops up dialog as below (Picture 6-18); choose "Geeetech A20M PLA high fi.rcf".



(Picture 6-18)

Now, the configuration file is imported. Click "Save". See picture (6-19).

Repetier-Host V2.1.3	– ø ×
File View Config Printer Tools Help	
Concel Lass Lie Fammet Tared	
39 Yike Texpersture Core Core	Object Placement Slicer Print Previes Manual Control SD Card
CuraEngine Settings	Slice with CuraEngine
Print Filamat	Silce with Curacingine
Seetted ACM FLA Maja 61 📑 Seete	Sliosr Curalingins . (73 Manager
Filest	
Filment Dimeter: [1,75 [m]	Codigeration
Play 100 (8)	Print Settings:
	Frint Configuration effects +
Teprstee	Adhesion Type: Nene .
Frint Temperature: 210 [* C]	Quality: 0.2 mm
Be4 Temperature: [0] [* C]	Support Type: Bone +
Colling	Speed
Nin Fan Speed 80 [9]	Slow Fast
Rut. Fan Speed: 100 (8)	Print Speed 50 mm/s Dater Terineter Speed 45 mm/s
Hinison Layer Tine: 5 [s]	Infill Pennity 276
Conductor and progent and minuter disputer and flow rules, hences it assess identical antroder. If you have a additionated start with different rules, the values from the first entroder are used for all. Frist temperatures or but in the start prode, in using different temperatures for different value is an police. For which the bight value of all sounder are used.	Rannet Setting:     Rearest Setting:     Extruler 1: Befield:     Colloge     descent second proper developed by Devel Bran. For nos     elements using investment developed by Devel Bran. For nos
Show in Log 🔮 Consumedia 🜒 Endria 🛞 Parminga 🚳 Errors 🛞 All 🛞 Antio Soroll 📋 Claur Log 🕥 Copy	
Initiality (pend) rendererintel(N) HD draphics 4400 Sileslavy (Sing Ast Woo for rendering in possible	<u></u>
Disconnected Geetech A20M -	Idle

## (Picture 6-19)

Choose "Geeetech A20M PLA high" as print configuration and "Geeetech A20M PLA high fi" as printing material setting. Details see picture (6-20) below.



Object Placement	Slicer Print Preview	Manual Control   SD Card
	Slice with Cu	ıraEngine
Slicer: CuraEn	ngine	• 😥 Manager
Print Settings:		Configuration ^
Print Configurati	on.: eeetech A20M PLA high	•
Adhesion Type:	None	•
Quality:	PLA high	•
Support Type:	None	•
Speed: Infill Density	Slow Print Speed: Outer Perimeter Speed: Infill Speed:	Fast 50 mm/s 45 mm/s 80 mm/s
		20%
🖌 🗹 Enable Cooling	ş	
Filament Settings:	:	_
Extruder 1:	Geeetech A20M PLA high	fi 🔹
	te, external program developed l s://www.ultimaker.com	by David Braam. For more

(Picture 6-20)

Now parameters setting are finished.

# 6.3 USB printing

You can start USB printing when the parameters setting are finished.

The model file format is .stl for 3D printer. You can download free models from websites such as <u>thingiverse.com</u> You can also design your own models.

• Load the printing model

Open the Repetier-Host and click "load". Choose a file and open it. See picture (6-21, 6-22).



(Picture 6-21)

lmport G-Code								×
$\leftarrow$ $\rightarrow$ $\checkmark$ $\uparrow$ $\blacksquare$ $\rightarrow$ This PC $\rightarrow$	→ Local Disk (E:) → Model → pikachu				✓ Ö Sear	ch pikachu		P
Organize 🔻 New folder								?
A Nam		Date modified	Туре	Size				
	pikachu_dual_body pikachu_dual_details	2/11/2019 17:17 2/11/2019 17:17	STL File STL File	23 KB 8 KB				
▲ WPS网盘	• •							
💻 This PC								
🧊 3D Objects								
E Desktop								
🗄 Documents								
🖶 Downloads								
👌 Music								
Pictures								
Videos								
🏪 Local Disk (C:)								
🕳 Local Disk (D:)								
Local Disk (E:)								
👝 Local Disk (F:)								
ight Network								_
File name: M	/K8_ExtruderTest				~ GC	ode/3D-Files		$\sim$
						Open	Cancel	

(Picture 6-22)

When it is loaded, you can use the buttons as picture below (picture 6-23) to zoom in, zoom out or rotate the model.



(Picture 6-23)

Adjust the direction of the model so that the flat part of the model is touching the hot bed. See picture below (6-24):





**Note:** If the model loaded is too big and beyond the printing platform, you need to zoom out the model. You can choose the X/Y/Z together, see picture (6-25):



(Picture 6-25)



Or zoom in/out them separately, see picture (6-26).





You need to combine the models for dual-color printing. Drag mouse to merge one model into another, see picture (6-27).



(Picture 6-27)

Below combined model for your reference, see picture (6-28).





#### Model slicing

When the size and direction of the model are set, choose the imported slicing parameters, and click "Slice with CuraEngine". See picture (6-29, 6-30).

(Picture 6-28)



(Picture 6-29)



#### (Picture 6-30)

You can find the model information such as estimated print time, the amount of filament needed, etc. Click "Print" to start USB printing. Refer to picture (6-31).

The printer will heat to the target temp and then start printing. Under high temperature, the filament will flow out of the nozzle, which is normal. You can use tweezers to clean up the residual material of the nozzle.



(Picture 6-31)

## 6.4 SD card printing

When all parameters are set, click "Save for SD print". It will pop up a dialog as picture below (See picture 6-32) and then click the save button to generate a .gcode file. Copy the gcode file to the SD card.



(Picture 6-32)

Insert the SD card into the slot which is on the right side of the LCD screen. Press the knob to enter the main menu and choose "Print from SD". See picture (6-33)





Choose the corresponding gcode file to start printing.

## Note:

- The printer can only read gcode file and the file name should be English letters, a space, an underscore or their combination.
- The Gcode file cannot be placed in any folder of the SD card, otherwise it cannot be read.

# 7 Color Mixer

# 7.1 Download

Download address: <u>http://www.geeetech.com/forum/viewtopic.php?f=92&t=61760</u>

# 7.2 Introduction

Free and easy-to-use, color mixer can mix your original single-color gcode file. You can create thousands program of mixing as you could.

• Click "Import G" to import .Gco file. Choose 2 (also support 3 extruders) as the "Extruder Number". See picture (7-1 and 7-2)



Geeetech Color Mixer
Import G Mix Color Export G
Gcode Name: No gcode loaded
Layer Count: 0
Layer height: 0
General
Gcode Flavor: RepRap/Marlin 🔻
Extruder Number 2
Add Delete Clear All
No Task

(Picture 7-1)



(Picture 7-2)

• After importing the .Gco file, you can set the start and end layer, and the percentage of



E0+E1 (start layer to end layer). You can adjust by dragging the slider or entering a value. See picture (7-3).

Geeetech Color Mixer
Import G Mix Color Export G
Gcode Name: Vase.gco Layer Count: 470 layers Layer height: 0.2 mm General Gcode Flavor: RepRap/Marlin Extruder Number 2
Add Delete Clear All
Configuration Start Layer: End Layer: Extruder0 Begin(%): E0 From: 100 Extruder0 End(%): E0 To: 0 E1 To: 100
Gcode loaded successfully!

### (Picture 7-3)

• You can click "Add" to set several start and end layer value, and the percentage of E0+E1 (start layer to end layer). See picture (7-4).



🧧 Geeetech Color Mixer
Import G Mix Color Export G
Gcode Name: Vase.gco
Layer Count: 470 layers
Layer height: 0.2 mm
General
Gcode Flavor: RepRap/Marlin 💌
Extruder Number 2
Add Delete Clear All
Configuration
Start Layer: 1
End Layer: 470
Extruder0 Begin(%):
E0 From: 100 E1 From: 0
Extruder0 End(%):
E0 To: 0 E1 To: 100
Configuration
Start Layer: 1
End Layer: 470
Gcode loaded successfully!

(Picture 7-4)

• When you finished configuration, you need to click "Mixer color" to mix your original gcode file. See picture (7-5).



🧁 Geeetech Color Mixer
Import G Mix Color Export G
Gcode Name: Vase.gco
Layer Count: 470 layers
Layer height: 0.2 mm
General
Gcode Flavor: RepRap/Marlin    Please wait
Coloring your gcode
30%
Configuration
Configuration Start Layer: 1
Start Layer:
Start Layer: 1 End Layer: 470
Start Layer: 1 End Layer: 470 Extruder0 Begin(%):
Start Layer: 1 End Layer: 470 Extruder0 Begin(%): E1 From: 0
Start Layer:   1     End Layer:   470     Extruder0 Begin(%):   1     E0 From: 100   E1 From: 0     Extruder0 End(%):   1
Start Layer:   1     End Layer:   470     Extruder0 Begin(%):   1     E0 From: 100   E1 From: 0     Extruder0 End(%):   1
Start Layer:   1     End Layer:   470     Extruder0 Begin(%):   1     E0 From: 100   E1 From: 0     Extruder0 End(%):   1
Start Layer:   1     End Layer:   470     Extruder0 Begin(%):   1     E0 From: 100   E1 From: 0     Extruder0 End(%):   1
Start Layer:   1     End Layer:   470     Extruder0 Begin(%):   1     E0 From: 100   E1 From: 0     Extruder0 End(%):   1



• Click "Export G" to export the mixed gcode file, which is named with a suffix "\_colored". Copy the file to the SD card and start to print. See picture (7-6, and 7-7).



Geeetech Color Mixer		
Import G Mix Color		
Gcode Name: Vase.gco		
Layer Count: 470 layers		
Layer height: 0.2 mm		
General		
Gcode Flavor: RepRap/Marlin 🔻		
Extruder Number 2		
Add Delete Clear All		
Configuration		
Start Layer: 1		
End Layer: 470		
Extruder0 Begin(%):		
E0 From: 100 E1 From: 0		
Extruder0 End(%):		
E0 To: 0 E1 To: 100		
Gcode colored successfully!		

(Picture 7-6)



(Picture 7-7)



# **8** Function introduction

## 8.1 Power loss-resuming capability

A20M has the power loss-resuming capability. When power recovery starts, it will pop up a dialog to ask if continuing the unfinished print caused by power outage, choose "Resume print". See picture (8-1).



(Picture 8-1)

When it reaches the target temperature, the X and Y axes will auto home. The extruder will extrude the residue in the nozzle. Use a tweezers to clean the nozzle before starting printing again.

Note:

- When power outage, move the nozzle away from the printing model in case the filament oozes out on to the print.
- Be sure to clean the residue in the nozzle before restarting the print or it would affect the quality of the print.

# 8.2 Reset button

The reset button is below the knob. When the printer works abnormally, press the reset button to reset the printer to avoid any damage. See picture (8-2).



(Picture 8-2)



# 8.3 Filament run-out sensor (Optional)

Before using this function, please check whether it is turned on or not. Choose "Control">"Filament">"Runout sensors" and make sure it shows "ON". See pictures (8-3, 8-4).

Main Temperature Motion Filament Store settings	t + + +
(Picture 8-3)	
Control E in mm3: Runout sensors:	t ffO nO

## (Picture 8-4)

• It will pop up the notification "Err: No Filament" when the filament is run out during printing and the printer will stop. See picture (8-5).



## (Picture 8-5)

- Press the extruder handle, remove the remaining filament before loading the new filament.
- When the filament is loaded, use a tweezers to clean the nozzle. Press the knob to enter the main menu, and choose "Resume print" to re-start the printing. See picture (8-6).



(Picture 8-6)

# 8.4 3D touch for auto bed leveling (Optional)

This printer supports auto bed leveling. Refer to the link below to know how to install the 3d touch sensor.

https://www.youtube.com/watch?v=\_RtsZDbR2po&t=66s

Visit our official forum

http://www.geeetech.com/forum/



## 9 Parameters

Printing parameters
 Printing technology: FDM
 Printing volume: 255\*255\*255mm<sup>3</sup>
 Printing accuracy: 0.1~0.2mm
 Positioning precision: X/Y: 0.011mm Z: 0.0025mm
 Printing speed: 60mm/s
 Nozzle quantity: 2-in-1-out single nozzle
 Nozzle diameter: 0.4mm
 Filament diameter: 1.75mm
 Filament: ABS/PLA/wood-polymer/PVA/HIPS/PETG, etc

• Temperature parameters Environment temperature:  $10^{\circ}C-40^{\circ}C$ Nozzle temperature: Max temp  $250^{\circ}C$ Hotbed temperature: Max temp  $100^{\circ}C$ 

Software parameters
 Operating system: Windows/Mac/Linux
 Slicing software: Repetier-Host, EasyPrint 3D, Cura, Simplify3D, Slic3r, etc.
 File format: .STL/.Gcode

• Electrical parameters Power input: 115V/230V Power output: DC24V, 360W Connectivity: SD card, USB LCD screen: LCD 12864

Mechanical parameters
 Printer size: 442x447x480 mm<sup>3</sup>
 Package size: 510x495x295 mm<sup>3</sup>
 Net weight: 8.8kg
 Gross weight: 11.0kg



Official site: <u>https://www.geeetech.com/</u>

Facebook Group:



Email us for technical support: <u>https://www.geeetech.com/contact\_us.html</u>



# **11 FAQ (Frequently Asked Questions)**

# 11.1 Abnormal extrusion

- The filament is tangled
- The nozzle temp is too low to reach the melting temperature required.
- There is carbonized residue inside the nozzle. Please replace it with the spare nozzle
- Insufficient heat dissipation of radiator of the extruder head causes the filament in the tube to melt in advance and the extrusion strength is insufficient. Please check whether the cooling fan works normally.
- The printing speed is so fast that the extruding speed can't match it. Please reduce the printing speed.

# 11.2 The gear of the extruder skips and makes an abnormal

## noise

- The nozzle is clogged; please refer to **10.1 abnormal extrusion**.
- Check whether the friction force between the extruder gear and the filament is enough. Please clean the residue.
- Check whether the voltage of the driver of the extruder is normal, and try to increase it by 0.1v until it works normally, max 1.2v.

# 11.3 First layer abnormal

- Non-stick: a. the nozzle is too far from the hot bed. Please re-level the bed; b. try to stick masking paper or glue stick on the surface of the hot bed.
- Not extruding and the bed scratched: a. the nozzle is too close from the hot bed. Please re-level the bed; b. check if the nozzle extrusion normal.

# 11.4 Layer shift

- The printing speed is too fast. Please slow it down.
- The belt of X or Y axis is too lose. Please tighten it.
- The X or Y axis synchronization wheel is not fixed firmly. Please adjust the eccentric nuts.
- The voltage of the driver of X/Y axis is too low.



# **11.5 Print stopped**

- USB printing: the signal is interfered. Please copy the model to SD card and print via SD card.
- SD card printing: the gcode file in the SD card is abnormal, please slice again.
- The quality of the SD card is poor. Please try another SD card.
- The power supply voltage in the area is not stable; please print after the voltage is stable.

Visit our official forum for more information: http://www.geeetech.com/forum/viewtopic.php?f=98&t=61864

# **12 Declaration**

# 12.1 Terms

Please be advised of the following terms (the "Terms") regarding this User Manual (this "Manual"):

All information in this Manual is subject to change at any time without notice and is provided for convenience purposes only. Geeetech reserves the right to modify or revise this Manual in its sole discretion and at any time. You agree to be bound by any modifications and/or revisions. Contact the Geeetech Support Team for up-to-date information.

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