

VNM CONFIGURATOR USER MANUAL

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About us

VNM Simulation JSC comes from Vietnam. We are a new simulation equipment manufacture. We aim to deliver high simulation equipment and help an active online DIY community where people can discuss how to make high quality simulation equipment by themselves when using VNM Simulation's firmwares (these are free for personal use).

Download the lasted UI/Firmware on this repo:

https://github.com/hoantv/CarSimulatorFirmware

the repo includes:

- Wheelbase firmware
- Shifter firmware
- UI

Will add pedal, handbrake, steering wheel soon.

I. Wheelbase Configuration

Will be updated

II. Shifter Configuration

Connect the shifter via USB Type B to PC, the icon shifter will change from orange to green. It indicates that the shifter is connected to PC. Go to shifter Tab.



There is 2 options Analog Mode and Inversion Mode that are used for the first setup before the shifter is packaged. So please don't modify 2 option.

		Calibra	ition		Stats				
H-P	atterr	1 -	С	alibrate	5	Select Report	-	FW	1.0.1.1
		0	_	_		Shifter.X	1455	Grid.X	90
	1	3	5	1		Shifter.Y	1952	Grid.Y	121
						Shifter.X1	738	Grid.X1	45
						Shifter.X2	2023	Grid.X2	125
						Shifter.X3	3115	Grid.X3	193
						Shifter.Y1	995	Grid.Y1	61
						Shifter.Y2	2778	Grid.Y2	172
1	>	Λ	6	8		N.G.			
	É	4	0	0		305		Max 3200	
						005		5200	
		9 (10				605		3632	

- Calibration Groupbox:
 - H-Pattern/Sequential combobox: Based on position of a switch, behind the shifter. The UI detect which mode is in use.
 - Calibrate button: Usually, you don't need this option, it is used for the 1st setup of the shifter when uploading firmware or factory reset. It used to set minimum, maximum of each shifter axises (X, Y axis).
 - The grid shows the gear area. When the shifter's rod is in an area, the number in this area will turn green. It indicates that a gear change to this gear number.



• Three circles 9, 10, 11: Cycles 9,10 indicate the positions of the truck's knob button if use. The cycle 11 indicate switch mode position.



- Stats Groupbox
 - Select Report combox: use for configuring the thresholds (X1, X2, X3, Y1, Y2) for each shifter gear. It must in "Select Report" to make the shifter work. "Shifter Configuration" is used to configure the thresholds.
 - FW: shows the version of shifter firmware.
 - Min-Max: show min value, max value of X, Y axis after calibration.

- Refesh button: Get the current shifter configuration
- Factory Reset: To reset to default configuration.
- Save: To save config to the shifter.

		Stat	s	
Select Report		•	FW	1.0.1.1
Shifter.X	1455		Grid.X	90
Shifter.Y	1952		Grid.Y	121
Shifter.X1	0		Grid.X1	
Shifter.X2	0		Grid.X2	
Shifter.X3	0		Grid.X3	
Shifter.Y1	915		Grid.Y1	56
Shifter.Y2	2762		Grid.Y2	171
Min			Max	
305			3200	
605			3632	

2.1. LED Effects Customization

- Enable LED Effects: There are 10 effects for LED, 9 effects were fix colors and Fade (custom) allow to change color. After changing this option, please re-plug the shifter.
 - Check: Enable LED Effects
 - Uncheck: Disable LED Effects
- Check / Uncheck each LED effect options to enable/disable each LED effects.
- Fade (custom): click to square button (1), a pop-up is display. You can choose available colors in (2). To add new color by click to edit button (3). In (4) you can click anywhere to choose a color that you like and click add to add new color to the list more options. After choosing a color, click OK button on popup.
- After changing this option, please re-plug the shifter.
- When shifter reconnect, it will play new effects/color that you chose before.

	Options		Co	or		00	S	Stats	
👅 Display trails	Inversion mc							FW	1.0.1.1
🖬 Analog mode	Filtering fact							Grid.X	
				4				Grid.Y	
Enable LED E	Effects						18	Grid.X1	
Color Wipe	🗷 Ra						123	Grid.X2	
Theater Chase	e 🗹 Ra							Grid.X3	
Fade (RGB)	🚍 Ha	More options:					15	Grid.Y1	61
🔳 Animated (R/	🔅 🔿 🔿						78	Grid Y2	172
Fade (Custor)) 🔲 🔳 St								
								Max	
Tips				H:	240 ⁰ Red	0			
'ou can only disp	lav one debug st	Value - 393216 Hex	- 000006	s:	100 % Green	0			
		3 🖋 Nev	(в:	2 % Blue	6			
		OK	Cancel	Add					

2.2. Calibrate the shifter

Note: Must calibration for each mode.

2.2.1. Calibrate h-pattern

It is uses to find the min-max value of X, Y axis. Only use at the 1st time uploading firmware or click factory reset button.

- Step 1: put h-pattern plate onto the shifter.
- Step 2: click "calibrate" button, it will turn into "finish", a instruction popup is display, click "ok" button.
- Step 3: Switch the shifter to the top-most, bottom-most, leftmost, right-most. Do it several times.
- Step 4: Click "finish" when you've done.
- Step 5: click save to persist calibrate information to ROM

2.2.2. Calibrate sequential

It is uses to find the min-max value of Y axis. Only use at the 1st time uploading firmware or click factory reset button.

- Step 1: put the sequential plate onto the shifter.
- Step 2: click "calibrate" button, it will turn into "finish", a instruction popup is display, click "ok" button.
- Step 3: Switch the shifter to the top-most, bottom-most. Do it several times.

- Step 4: Click "finish" when you've done.
- $\circ~$ Step 5: click save to persist calibrate information to ROM

2.3. Set the shifter's thresholds

2.3.1. Set the h-pattern thresholds

- Step 1: Put the h-pattern plate to the shifter, switch to h-pattern mode.
- Step 2: On select report combo box, choose Shifter configuration.
- Step 3: click "display trails" to show the road of shifter's position.
- Step 4: move the shifter to each position. The trail display on the grid like this.



• Step 5: Drag/drop the vertical white lines such that when the shifter at a position, The green pot doesn't That point does not overlap white lines.

1	3	5	7
2 🖕	4	6	8

- Step 6: Click save
- Step 7: test again to make sure all gear position work.

2.3.2. Set the sequential thresholds

- Step 1: Put the sequential plate to the shifter, switch to sequential mode
- Step 2: do like h-pattern setting with only 2 horizontal white lines
- Step 3: Click save
- Step 4: test again to make sure all gear position work.

2.4. Troubleshoot

when plug the shifter into PC, ensure "analog mode" is checked to make the shifter work properly. If not, check it and save. Reconnect the shifter.

2.4.1. Cannot change the gear

 Step 1: Ensure "Select Report" combox is default value (Select Report)

		ats	
Select Report	-	FW	1.0.1.1
Shifter.X	2048	Grid.X	127
Shifter.Y	1974	Grid.Y	122
Shifter.X1	0	Grid.X1	
Shifter.X2	0	Grid.X2	

- Step 2: if "Select Report" combox is default value, change its value to "shifter configuration".
- Step 3: Check min-max value, min < 1000, max > 3500, if not do calibration and set threshold again.
- Step 3: Moving the shifter's rod to check the green pod moving. Check when it stops at a gear, it overlaps white lines or not. If it overlaps, adjust the lines' position
- Step 4: if it still fails, capture the video and send us via email: <u>sale@vnmsimulation.com</u>

2.5 Update firmware

• Download update tool:

https://github.com/hoantv/CarSimulatorFirmware/tree/master/Update%20too 1

- Download lastest firmware VNMShifter.hex in: https://github.com/hoantv/CarSimulatorFirmware/tree/master/shifter
- Connect USB A to USB A to usbA port has icon upgrade, remove usb type B cable



- Open tool after installing
- Click connect icon, it connect to MCU of the shifter.

📕 STM32 ST-LII	NK Utility							-		\times
File Edit View	Target ST-L	INK External	Loader Help							
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Memory display						Device	STM32F10xx High-density			
Address: 0x0	8000000 V Siz	e: 0xE180	Data Wi	dth: 32 bits	7	Device ID	0x414			
					_	Revision ID	Rev X			
Device Memory (0x08000000 :	Binary File				Fildshi size	STORAGE		Livel	lodate
Target memory, A	ddress range: [0xi	08000000 0x080	OE 1BC]						-	
Address	0	4	8	С	ASCII					^
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0x08000020	00000000	00000000	00000000	0800DC81		Ü				
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0x08000050	0800119D	0800119D	0800119D	0800119D						
0x08000060	0800119D	0800119D	0800119D	08001065		e				
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0x08000080	0800119D	0800119D	0800119D	0800119D						
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22:09:16 : SWD F 22:09:16 : Conne 22:09:16 : Debug 22:09:16 : Device	requency = 4,0 M ction mode : Conn in Low Power mod ID:0x414	Hz. ect Under Reset le enabled.								
22:09:17 : Device	family :STM32E10	yves Ixx Hich-density								
		and a get out out of the								~
Debug in Low Pow	er mode enabled.		Device ID:0x	414			Core State : Live Update Disa	bled		

• Click "verify program" and browse to the VNMShifter.hex which was downloaded.

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👼 STM32 ST-LI	NK Utility						-	-		×
File Edit Viev	v Target ST	INK External L	oader Help							
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Memory display						Device	STM32F10xx High-density			
address Door		0.5100	Data Wid			Device ID	0x414			
Address: Uxu	18000000 V Siz	ve: UXEIBC	Data wid			Revision ID	Rev X			
Deuise Memory (a 0x08000000 •	a : a :				Flash size	512KBytes		_	
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22:09:16 : Debug 22:09:16 : Device	in Low Power mod	le enabled.								
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lebug in Low Pow	er mode enabled.		pevice ID:0x4	14			Core State ; Live Update Disabli	ed		

• Click start to upload firmware

STM32 ST-LINK	Utility						_		\times	
File Edit View	Target ST-	LINK External Lo	oader Help							
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Memory display					Device	STM32F10xx H	ligh-density			
Address: 0x0800	0000	ize: 0vE1BC	Data Width: 32 bits		Device ID	0x414				
			Data Widah. 52 bits	<u> </u>	Revision ID	Rev X				
Device Memory @ 0	x08000000 :	Download [VNN	1Shifter.hex]			×				
[VNMShifter.hex], Ad	dress range:	Start address	0×0800000							
Address	0								^	
0x08000000	20010000	File path	D:\STM32\Projects\Release	Git\CarSimula	torFirmware\sh	Browse				
0x08000010	080032A7	Extra options								
0x08000020	00000000		Skip Flash Erase	🗌 Skip	Flash Protectio	on verification				
0x08000030	080032C5	Verification								
0x08000040	08003E9D		Verify while programming Verify after programming							
0x08000050	08003E9D	Click "Start" to p	rogram target.							
0x08000060	08003E9D									
0x08000070	08003E9D									
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22:16:17 : [VNMShift	er.hex] opene	ed successfully.								
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Debug in Low Power r	node enabled		Device ID:0x414		[Core State : No N	Vemory Grid Select	ed	_	
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• Remove usb A to usb A cable, connect USB B to PC. Open the GUI, it displays the version equal to the version you have downloaded.

VNM Configuration v1.4.0.15			00
■ ▼ Base Hardware Shifter Debug			
Options	Calibration	St	1a
Display trails	Sequential Calibrate	Select Report -	FW 1.0.2.1
Analog mode Filtering factor 32	1	Shifter.X 0	Grid.X 0
Enable I ED Effects		Shifter.Y 0	Grid.Y 0
Color Wipe Rainbow Cycle		Shifter.X1 0	Grid.X1 -
Theater Chase Rainbow		Shifter.X2 U	Grid.X2 -
Fade (RGB)		Shifter.X3 0	Grid.X3 -
Animated (R/W) Animated (Ring)		Shifter.Y1 947	Grid.Y1 58
🐱 Fade (Custom) 📃 📃 Strobe		Shifter.Y2 2697	Grid.Y2 167
	2	Min	Max
Tips			
Those grid lines are draggable. Make use of the feature.	9 (10) (11)		
			Contrast Deart
Keiresi	LI Save		Tactory Reset
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