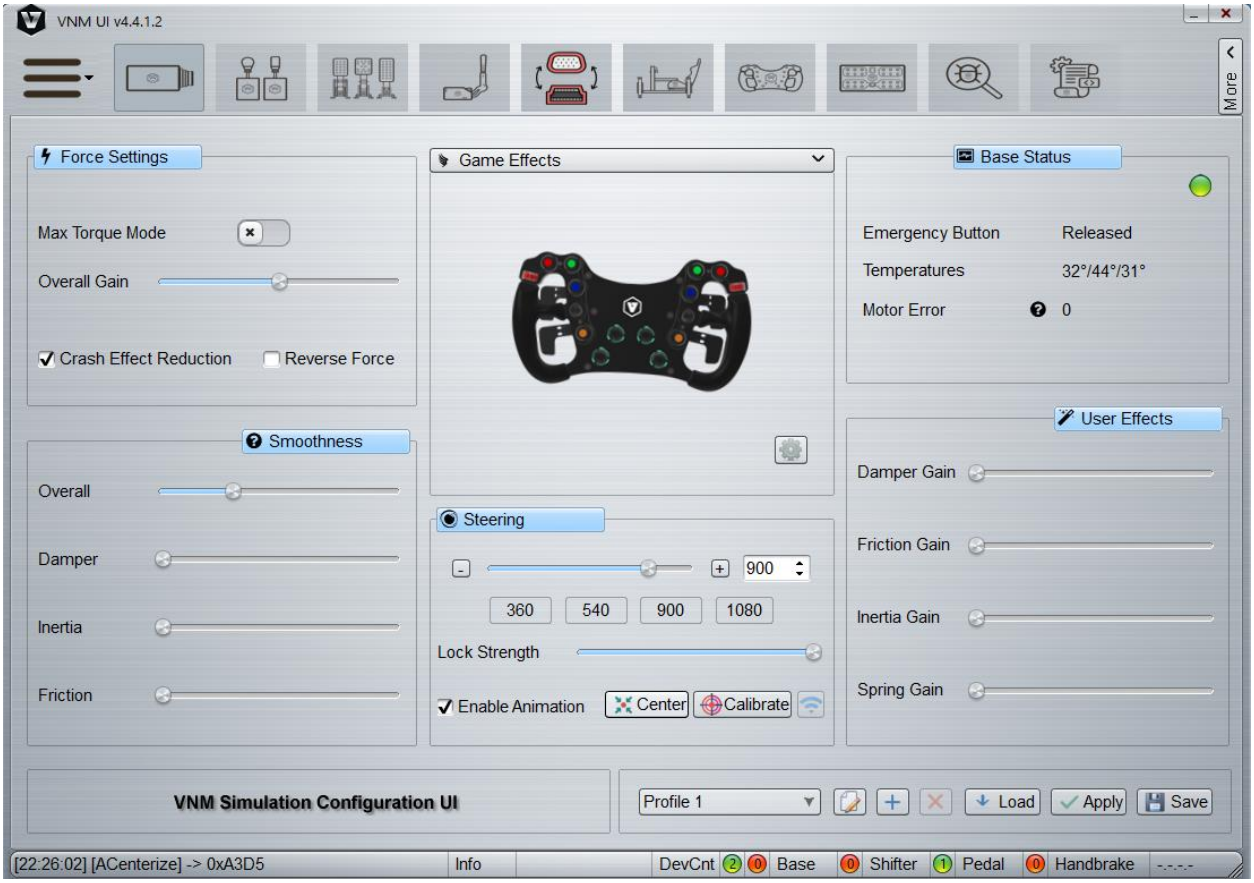
VNM SIMULATION., JSC

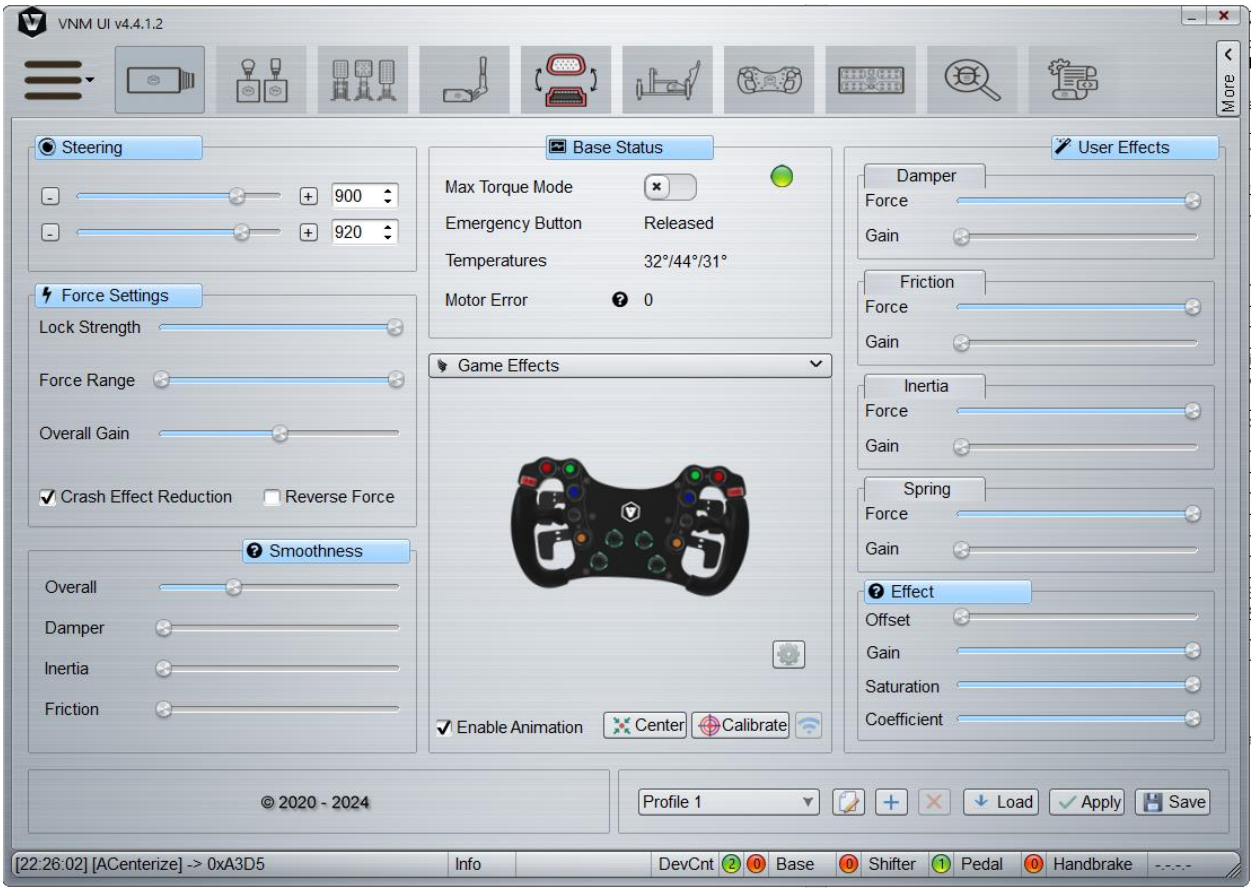
VNM DIRECT DRIVE CONFIGURATION MANUAL

1. UI Configuration

1.1. Basic Mode



Basic Mode Direct Drive Configuration



Full Mode Direct Drive Configuration

1.1.1. Force Settings

Name	Description	Default Value
Max Torque Mode	Twice the force when turn on	off
Overall Gain	the higher overall gain, the higher final force.	50%
Crash Effect Reduction	Limit rotation speed of steering wheel	checked
Reverse Force	Reverse force data of game	unchecked

1.1.2. Smoothness

The smaller smoothness value, the smoother force feedback.

Name	Description	Default Value
Overall	Smooth total force	150
Damper	Only smooth damper force	0

Inertia	Only smooth inertia force	0
Friction	Only smooth friction force	0

1.1.3. Steering

Name	Description	Default Value
Steering Angle	Maximum angle from the left to the right of steering wheel. Click "-", "+" to decrease or increase angle. There are some option to set quickly plus input for angle too.	900
Lock Strength	The maximum force to lock the wheel at maximum force	10000
Enable Animation	Animates steering wheel movement	NA
Center	Reset the wheel position to 0	NA
Calibrate	Do calibration process. The calibration process automatically after update firmware. Only do calibration process when steering movement is not smooth without force feedback being applied	NA

1.1.4. Base Status

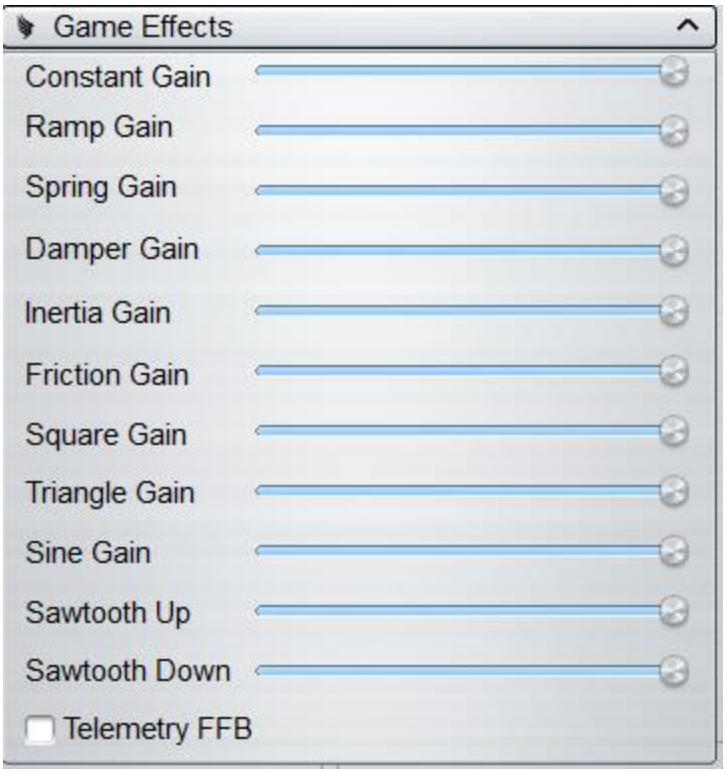
Name	Description	Default Value
Emergency Button	The Emergency Stop Button must be connected to the DD and the EMC Stop Button released for the DD to operate. The EMC Stop button attempts to stop the DD immediately when it is pressed	NA
Temperature	Temperature of mosfet, driver and brake resistor respectively.	/0/0/0
Motor Error	Error code of motor	0

Motor code Error translation

Bit	Severity	Description	Solution
0	Critical	Internal Error	Reset direct drive
1	Critical	Over Voltage Protection	Reset direct drive
2	Critical	Over Current Protection	Reset direct drive
3	Critical	No response from Encoder	Reset direct drive, check encoder connection
4	Critical	Encoder value is abnormal	Reset direct drive, check encoder connection
5	Critical	Encoder internal error	Reset direct drive
6	Critical	Brake temperature is too high	Turn of DD 30 minutes
7	NA	Reversed	
8	Major	EMC Stop Pressed	Release EMC Stop Button
9	Major	USB disconnected	Connect USB cable to PC
10	Major	Over Voltage Protection	Press and release EMC Stop Button
11	Major	Under Voltage Protection	Press and release EMC Stop Button
12	Major	Mosfet temperature is high	Turn off DD at least 5 minutes
13	Major	Driver temperature is high	Turn off DD at least 60 minutes
14	Major	Brake temperature is high	Turn off DD at least 5 minutes

1.4.5. Game Effects

Click to “Game Effects”. You can increase gain to each effect of game data



Enable Telemetry FFB: Future use.

1.4.6. User Effects

User can add some effect to simulate nature of steering wheel movement, only active when a game runs.

Name	Description	Default Value
Spring	Make the steering wheel try to center all time.	0
Damper	Make the steering wheel less oscillation	0
Inertia	Simulate the steering wheel weight	0
Friction	Simulate the friction of steering wheel	0

1.1.5. Save Profile

1 – Select profile: 1st to 4th profile are saved to Direct drive. From 5th profile is saved to PC.

2 – Rename selected profile

3 – Add new Profile

4 - Delete a selected profile, only from 5th profile

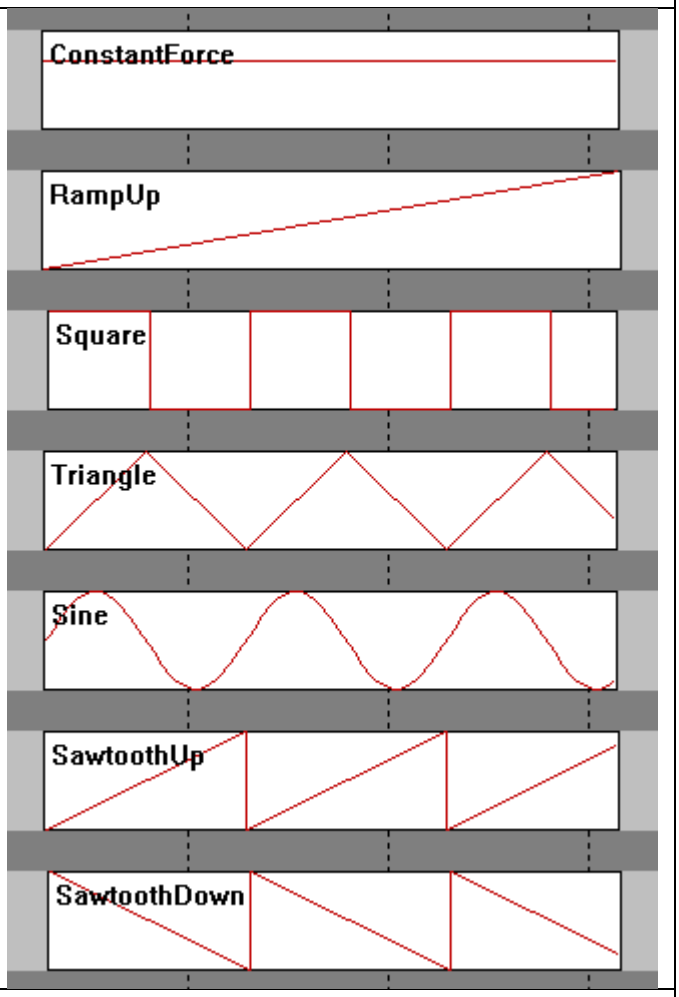
5 – Load profile from DD in case you want rollback a configuration hasn't been applied to the DD.

6 - Apply the configuration to the DD.

7 – Save Configuration permanently to DD or PC.

2. Game Tunning

2.1. Effects description

Effect Name	Description	Picture of effects
Constant force	A steady force in a single direction	
Ramp force	A force that steadily increases or decreases in magnitude	
Square force	Create a square wave form force	
Triangle force	Create a triangle wave form force	
Sine force	Create a sine wave form force	
Sawtooth Up force	Create a sawtooth up/down form force	
Sawtooth Up force		
Spring force	The force increases in proportion to the distance of the steering wheel from center.	

Damper force	The force increases in proportion to the speed with which the user moves the steering wheel	
Inertia force	The force increases in proportion to the acceleration of steering wheel	
Friction force	The force is applied when the steering is moved and depends on the defined friction coefficient.	

Depends on each game user can increase/decrease gain of each force

2.2. Game Tunning

Game	Game effect	User Effect
AC/ACC/iRacing/ F1 2020	Constant gain, damper gain	All
AMS2	Constant gain	All
Dirt4/Rally 2.0	Constant gain, friction gain	All
Project car 2	Constant gain, sine gain	All
Raceroom	Sine gain	All
RF 2	Sine gain, damper gain	All
WRC Generation	Ramp gain, square gain, sine gain, spring gain, damper gain	All
WRC 10	Constant gain, sine gain, spring gain, damper gain	All
To be updated		