

edy555 0.0.9-20190818 <ul style="list-style-type: none"> support 900MHz x3 harmonic operation add experimental x5 harmonic adjust gain and drive strength of LO add sample command to evaluate IF amplitude and dynamic range add version command rearrange menu to reduce clicks <ul style="list-style-type: none"> split save and restore trace and marker menu remove glitch at first point in sweep span interpolate only when cal applied add visual feedback on correction/pause menu item add n, p key in number pad screen for electrical delay fix the mistake of error correction formula for s11 fix the mistake of the impedance calculation formula 	hugen79 0.2.3-20191008 <p>Synchronize the latest code of edy555. As it is possible to use commands to set the harmonic switching point, the 800MHz version is no longer compiled 2. Since the harmonic switching point is variable, modify si5351 is the same as edy555.</p> <p>The 3.AA version reduces a set of calibration data storage space, and the extra 6K Flash is used to store large fonts.</p>	qrp73 0.4.1-20191024 <ul style="list-style-type: none"> -fix thread safety; -fix numpad frequency rounding errors; -add temperature and battery live update 	reald 0.3.0-20191020 <p>Like ttrfttech 0.3.0-20191020 just with bigger font</p>		
0.1.0-20190914 <ul style="list-style-type: none"> use gcc-8.2.1 to build firmware contributed by cho45 <ul style="list-style-type: none"> add screen capture command (use script <code>./python/nanovna.py -C</code>) 	v0.2.3-20191009 NanoVNA-H version compiled on October 9, 2019 <p>1.Synchronized edy555 code</p> <p>2.AA version display details optimization</p>	0.4.2-20191029 <ul style="list-style-type: none"> -fix multi-threading -add color command 	0.3.1-20191021 <p>Like ttrfttech 0.3.1-20191021 with larger font</p>		

<ul style="list-style-type: none"> ○ add trace format of real/imag/impedance/reactance ○ add battery indicator (needs install D2. any small diodes are suitable. 1N4148WS or B5817WS is the best. see https://lowreal.net/2019/09/09/1) ○ add version info screen ○ add menu and command to enter dfu mode ○ add menu item to calibrate touch screen and test it ○ optimize line drawing ○ reduce sram usage 					
0.2.0-20190928 <ul style="list-style-type: none"> • in-device TDR support (contributed by @cho45) • add <code>scan</code> command for multisegment scan excess 101 points • fixed invalid sweep at the narrow span (<5kHz) • fixed failures caused by a race condition between USB and measuring loop • find device automatically in python script 	0.2.3-2 -20191018 <p>0.2.3-2: 1. Synchronize the latest version of edy555 without disabling function inlining, so the flash space is not enough, the Version interface shows less dot content, and the TDR mode shows two Mark dot functions ...</p> <p>... Unsynchronized to save flash, this may use the last version of inline optimization. After disabling function inlining, the screen swipe speed will be significantly slower;</p> <p>2. Fixed the problem that the clear length of AA version clear_flash is</p>	0.4.3 -20191101 <ul style="list-style-type: none"> • fixed marker update crash • added vbat_offset command (allows to set battery diode offset) • implemented proper battery capacity percent calculation • new colored battery indicator with more levels <p>You can use vbat_offset command to set proper diode offset for battery voltage</p>	0.3.1.1 -20191026 <p>feat: big info for ch0</p>		

	<p>incorrect;</p> <p>3. After recompilation, the cho45 web interface can be connected normally, but I don't know where the problem lies. It may be the limit of the previous version of flash.</p>	<p>measurement.</p> <p>In order to save vbat_offset value permanently, you're needs to do any of these actions:</p> <ul style="list-style-type: none"> • menu CONFIG => SAVE • execute console command saveconfig 		
<p>0.2.3-20191008</p> <ul style="list-style-type: none"> • change toggle behavior of trace menu and marker menu • add <code>transform</code> command to change mode of TDR • add <code>threshold</code> command • remove cal glitch between different harmonic modes • NanoVNA-saver in multisegment mode shall work well <p>Needs touch calibration and save it after flashing firmware.</p>	<p>0.4.0-20191115 NanoVNA-H version compiled on November 15, 2019</p> <p>Using the code of nanoVNA-Q of qrp73, the driving of si5351 and aic3204 is more reasonable. By judging that the si5351 locking state is more reasonable than simply setting a delay, it can effectively avoid the noise caused by the unstabilization of si5351.</p> <p>Unlike the compilation optimization of QRP73 and edy555, inline optimization is not disabled, and the refresh efficiency is better. Due to limited flash space DUMP, SCANRAW, COLOR commands are not available.</p> <p>Optimized for AA version display.</p>	<p>0.4.4-20191126</p> <ul style="list-style-type: none"> • added average mode for better calibration • minor fixes <p>Use menu CAL => AVERAGE to enable average mode before calibration.</p> <p>Note: average mode sweep time is much slower (about 3 seconds).</p> <p>When you perform calibration with enabled average mode it allows to get better calibration.</p>	<p>0.3.1.2-20191027</p> <p>Like 0.3.1 with big info screen for CH0. (Config -> "Info CH0"). Should be much better readable outdoors.</p>	

0.3.0-20191020 <ul style="list-style-type: none"> • make group delay trace format work • support negative time value • remove close menu item • minor fixes 	0.4.0-3-20191125 NanoVNA-H version compiled on November 25, 2019 <ol style="list-style-type: none"> 1.The absolute value of the linear format is displayed; 2.Si5351 default 8mA output; 3.The AA version shows 4 traces. 		0.4.0-1-20191106 <p>feature: save infoscreen status to config (CONFIG -> SAVE)</p>		
0.3.1-20191021 <p>fix sign of group delay</p>			0.4.0-20191106 <p>ttrftech 0.4.0 with large font and info screen</p>		
0.4.0-20191106 <ul style="list-style-type: none"> • add marker function to search maximum and minimum • update <code>nanovna.py</code> script • reduce flash size • add guide after clearconfig • some minor fixes • add list of pc tools in README.md <p>After updating firmware, don't forget touch cal and try clearconfig if traces become scratched.</p>			191109-0.4.0-2 0.4.0-2 with bigger font and info screen <ul style="list-style-type: none"> • fix:invert active trace • feat: create dfu file 		
0.5.0-20191117 <ul style="list-style-type: none"> • add lever operations that support shifting center freq, zoom span and marker search • change touch cal default for 2.8 inch lcd panel 			191117-0.5.0 0.5.0 with bigger font and info screen		

<ul style="list-style-type: none"> • some minor fixes <p>After updating firmware, recommend to do touch cal and do clearconfig if traces become scratched.</p>					
0.5.1-20191123 add marker operation groupdelay → edelay			191123-0.5.1 0.5.1 with bigger font and info screen		
https://github.com/ttrftech/NanoVNA/releases	https://github.com/hugen79/NanoVNA-H/releases	https://github.com/grp73/NanoVNA-Q/releases	https://github.com/reald/NanoVNA/releases		