**ChibiOS /RT Shell**

ch> **help**

Commands: help e it info echo systime threads reset freq offset time dac saveconfig clearconfig data dump frequencies port stat sweep test touchcal touchtest pause resume cal save recall trace marker edelay

ch> **info**

Kernel: 4.0.0

Compiler: GCC 5.4.1 20160919

Architecture: ARMv6-M

Core Variant: Corte -M0

Port Info: Preemption through NMI

Platform: STM32F072 B Entry Level Medium Density devices

Board: NanoVNA

Build time: Jun 11 2019 – 14:05:54

ch> **echo**

Usage: echo "message"

ch> **systime**

1170989 ***< 117.0989 sec***

ch> **threads**

stklimit stack addr refs prio state name

20000200 2000039C 20001C18 0 128 WTE IT main

20001B18 20001B5C 20001BB0 0 1 READY idle

20002930 20002AA4 20002CB8 0 128 READY sweep

20002CF0 20002D6C 20002F38 0 129 CURRENT noname

ch> **freq**

usage: freq {frequency(Hz)}

ch> **offset**

usage: offset {frequency offset(Hz)}

ch> **time**

1980/1/1 193208 ***< 1980 ? /? 193.208 86400.000 sec / day ...Solution to setting time has not been found. No usage info indicates it may set to 0 at power on and count millisecs from then.***

ch> **dac**

usage: dac {value(0-4095)}

current value: 1922

ch> **data *< Generates a table of S11 if S21 =0 (nothing connected to the Ch1 port. Getting SWR from this is not hard with a spreadsheet and I have computed this by copy/paste of the serial port data into a spread sheet***

0.002914631 -0.000044411

0.009082146 0.012431291

0.014481564 0.020358344

0.020406406 0.026595031

0.026703841 0.031368218

0.033502649 0.034822832

0.040662586 0.037221215

0.047891918 0.038056861

0.055256772 0.038030117

0.062381781 0.036410804

0.068479739 0.033907450

0.074720084 0.030078757

0.079672023 0.025101494

0.083745338 0.019209003

0.086964711 0.012973051

0.088880449 0.006505888

0.089303486 -0.000380656

0.088833346 -0.007566938

0.087052181 -0.014321482

0.083946287 -0.021133294

0.080038443 -0.026602344

0.074801675 -0.031531155

0.068960979 -0.035757478

0.062580965 -0.039035376

0.055507857 -0.041154149

0.047850910 -0.041815120

0.040593314 -0.040819376

0.033490154 -0.038617558

0.026992315 -0.036259278

0.020471507 -0.031422723

0.014888131 -0.026698702

0.010105262 -0.020195964

0.007362676 -0.013677049

0.004339616 -0.006829643

0.007563455 -0.002553192

0.004226440 0.007223883

0.004716934 0.016163945

0.008240290 0.023359354

0.012913937 0.030624659

0.017911838 0.035844795

0.022441828 0.040110651

0.029322041 0.041661351

0.036915406 0.044078517

0.042903173 0.043651960

0.050381761 0.045350503

0.056890945 0.043685141

0.061136916 0.040598101

0.067818790 0.035940930

0.071451164 0.031139956

0.074886634 0.026211511

0.077088139 0.019349886

0.079637624 0.012428752

0.081097416 0.009196385

0.077610887 0.002548883

0.075790815 -0.003381148

0.071063712 -0.009582906

0.065864793 -0.011717405

0.059294942 -0.011860326

0.059006985 -0.011564961

0.058414932 -0.012452413

0.057506941 -0.016704268

0.048550382 -0.022183904

0.041672866 -0.028520002

0.028280070 -0.024421969

0.024776853 -0.021636575

0.016391528 -0.015490431

0.010925926 -0.010219944

0.008915876 -0.005277460

0.005602274 0.002576644

0.003230245 0.011711699

0.003517195 0.019050713

0.006167319 0.031910605

0.006243645 0.037170313

0.013330359 0.043925072

0.016738735 0.049080424

0.023266268 0.054758429

0.031024737 0.055789999

0.044419001 0.060791715

0.049183972 0.059961441

0.057282555 0.058519903

0.061178971 0.054444916

0.075006678 0.053816888

0.080081164 0.049531791

0.086221121 0.043284136

0.089346975 0.033424165

0.090252399 0.024649830

0.091898627 0.021894499

0.097399592 0.007712577

0.092705994 -0.002077830

0.087912924 -0.007786165

0.085471466 -0.006766212

0.075346596 -0.021939301

0.063961967 -0.027168139

0.058664832 -0.032451219

0.056178838 -0.033496465

0.044516440 -0.032275576

0.034902483 -0.028705647

0.025569876 -0.033842548

0.020239196 -0.027700945

0.010973765 -0.018977096

0.003550363 -0.019857056

ch> **dump**

2C70 FF55 21A1 FF3E 08E2 FF43 EC7D FF5E D806 FF84 D3DF FFAA E1DF FFB9 FBF0 FFB1

1751 FF94 2997 FF6B 2A5A FF4A 18D7 FF3D FD57 FF4A E2DB FF6C D408 FF94 D777 FFB4

EB4A FFBB 0741 FFAA 2011 FF7F 2C0F FF58 253F FF3D 0E6A FF3A F1CB FF54 DAD2 FF79

D31A FFA0 DDB1 FFB7 F634 FFB5 124E FF9B 272A FF78 2BB1 FF55 1DA3 FF40 0338 FF4A

E755 FF69 D5C8 FF90 D55D FFB2 E674 FFBD 0180 FFB2 1BF9 FF8F 2B4D FF66 2806 FF46

13B0 FF40 F741 FF54 DE6E FF75 D34A FF9F DA48 FFBC F0A0 FFBC 0CAE FFA5 23ED FF81

***“In this state, connect to the PC and open the serial console. Output contents of waveform buffer with dump command I will let you. After repeating several times, if something is seen, it is normal (this data is 5kHz sine wave 1 ms 48 samples for 5 cycles). “***

*ch> dump F045 0000 E03A 0000 DD4E 0000 E8B5 0000 FDC3 0000 13BC 0000 2188 0000 217E 0000 139D 0000 FD9B 0000 E89A 0000 DD48 0000 E049 0000 F067 0000 06FC 0000 1AA9 0000 2351 0000 1D66 0000 0B51 0000 F48C 0000 E288 0000 DCB1 0000 E56D 0000 F929 0000 0FBA 0000 1FC6 0000 22B3 0000 174B 0000 023E 0000 EC45 0000 DE78 0000 DE82 0000 EC63 0000 0264 0000 1766 0000 22B8 0000 1FB7 0000 0F99 0000 F904 0000 E557 0000 DCB0 0000 E29B 0000 F4B0 0000 0B74 0000 1D77 0000 234E 0000 1A92 0000 06D6 0000*

*NOTE: This example is 96 16 bit numbers. The second number is not 0 in the real sample above this.*

*One guess is that these are vector pairs with the second number 0.*

ch> **frequencies**

50000

9049500

18049000

27048500

36048000

45047500

54047000

63046500

72046000

81045500

90045000

99044500

108044000

117043500

126043000

135042500

144042000

153041500

162041000

171040500

180040000

189039500

198039000

207038500

216038000

225037500

234037000

243036500

252036000

261035500

270035000

279034500

288034000

297033500

306033000

315032500

324032000

333031500

342031000

351030500

360030000

369029500

378029000

387028500

396028000

405027500

414027000

423026500

432026000

441025500

450025000

459024500

468024000

477023500

486023000

495022500

504022000

513021500

522021000

531020500

540020000

549019500

558019000

567018500

576018000

585017500

594017000

603016500

612016000

621015500

630015000

639014500

648014000

657013500

666013000

675012500

684012000

693011500

702011000

711010500

720010000

729009500

738009000

747008500

756008000

765007500

774007000

783006500

792006000

801005500

810005000

819004500

828004000

837003500

846003000

855002500

864002000

873001500

882001000

891000500

900000000

ch> **port**

usage: port {0:T 1:R }

ch> **stat**

average: -85 -125

rms: 3734 38

callback count: 206502

awd: 0

ch> **sweep**

50000 900000000 101 *< Start freq End freq No. of points; delta = (End-Start)/(points-1)*

ch> **test** *< runs for about 10 s and ne t time ends right away*

ch> **touchcal**

first touch upper left, then lower right...done

touch cal params: 655 857 131 155

ch> **touchtest**

ch> **pause**

ch> start *< Result of an entry that is not a command*

start ?

ch> **resume**

ch> **trace**

0 LOGMAG CH0 1.000000000 7.000000000

1 LOGMAG CH1 1.000000000 7.000000000

2 SMITH CH0 1.000000000 0.000000000

3 PHASE CH1 1.000000000 4.000000000

ch> **marker**

1 100 900000000

ch> **save**

save {id}

ch>