

PuTTY Command Line instructions for the Windfreak SynthHD.

Install PuTTY:

For Windows, copy putty.exe in the /Putty command line/ folder on the CD and paste where you want it on your PC.

For Linux type these commands into a terminal:
sudo apt-get install putty

Configure PuTTY:

Plug in the SynthHD to a USB port.

Windows: Double click putty.exe to start.

Linux: Run Command: putty

Windows: Go to Control Panel – Device Manager and determine what your COM Port assignment is to the device. Make sure to unplug and replug and verify you know for sure.

Linux: type this command into a terminal to determine what your COM Port assignment is to the device:
\$ dmesg | grep tty

Windows: In Putty--Session--Connection type, click Serial and change the “Serial line to connect to” to COMxx where xx is the port number from above. Example COM19

Linux: In Putty—Session--Connection type, click Serial and change the “Serial line” to /dev/ttyxxx where xxx is the port number from above. Example /dev/ttyACM0

In Putty – Terminal -- check “Implicit CR in every LF”. Check “Force on” for both “Local echo” and “Local line editing”.

In Putty – Window – Selection – Action of mouse buttons – check Windows

In Putty – Session – Connection type check “Serial”. You should see Serial line come up as your COM Port above.

In Putty – Session – Saved Sessions type in SynthHD. Click Save. Now you should be able to open putty fresh, click SynthHD, and load all these settings without retyping them. You might need to change the Port depending on your PC and the introduction of new serial devices.

Use the PuTTY Terminal:

Plug the SynthHD in to USB and apply 6VDC to the power connector.

In Putty – Session – Saved Sessions -- click SynthHD(created above), click Load and at the bottom click Open. A terminal should open. If not, double check that you are opening the proper COM port.

In the terminal type a “?” (without the quotes) and hit enter. Results should look similar to the output at the end of this document.

Change frequency on channel A by sending a “C0f1234.5678” (without the quotes). This sets the frequency on channel A to 1234.5678MHz.

The Control Channel doesn’t always have to be set if you are constantly working with the same channel.

If you are an international user, be sure and use a “.” (period) as a decimal space and not a “,” (comma). The SynthHD only recognizes a period.

Check the frequency set by the current control channel sending a f? Or check frequencies and amplitudes on both channels at once: C0f?a?C1f?a? (Note amplitude is a raw DAC value. Calibration to dBm is done in software through a lookup table.)

See commands in the output below for other possibilities. The terminal gives a lot of control to the user and does not protect the device much from bad commands. Use with caution. There are also some hidden commands used in manufacturing so be careful not to send anything other than what is detailed below.

Also, be careful using copy and paste and also Control C and Control V. They don’t work like normal in Windows.

Putty Terminal Output from a “?” command:

?
C) Control Channel (A(0) or B(1)) 0
f) RF Frequency Now (MHz) 1001.1000000, 4000.0
~) RF Phase Step (0=minimum, 360.0=maximum) 350.0000, 10.0000
h) RF High(1) or Low(0) Power 1, 1
r) PA On(1) or Off(0) 1, 0
E) PLL Chip En On(1) or Off(0) 1, 0
a) RF Power (0=minimum, 45000=maximum) 17853, 24632
I) PLL output power 2, 2
U) PLL charge pump current 6, 6
d) PLL mute till LD 1, 1
m) Muxout function 6, 6
T) Autocal On(1) or Off(0) 1, 1
b) Feedback select Fundamental(1) or Divided(0) 0, 0
i) Channel spacing (Hz) 1000
v) Show version (0=firmware, 1=hardware)
e) Write all settings to eeprom
x) Reference (external=0, int 27MHz=1, int 10MHz=2) 1
l) Sweep lower frequency (MHz) 1000.0, 1000.0030000
u) Sweep upper frequency (MHz) 5000.0, 4999.9970000
s) Sweep step size (MHz) 200.0, 200.0030000
t) Sweep step time (mS) 50.000 ms, 50.000 ms
j) Sweep D/A level low (0 - 45000) 17000, 17006
J) Sweep D/A level high (0 - 45000) 17000, 16990

^) Sweep direction (up=1 / down=0) 1, 1
 k) Sweep differential frequency separation (MHz) 1.0
 n) Sweep differential: (0=off, 1=ChA-DiffFreq, 2=ChA+DiffFreq) 0
 X) Sweep type (linear=0 / tabular=1) 1, 0
 g) Sweep run (on=1 / off=0) 0
 c) Sweep set continuous mode 0
 w) Sweep enable trigger: (0=software, 1=sweep, 2=step) 0
 F) AM step time in microseconds 0
 q) AM # of cycle repetitions 1
 A) AM Run Continuous (on=1 / off=0) 0
 P) Pulse On time is 2, 1 us
 O) Pulse Off time is 10, 10 us
 R) Pulse # of repetitions is 10, 10
 :) Pulse Invert signal (on=1 / off=0) 0, 0
 G) Pulse Run one burst
 j) Pulse continuous mode 0
 <) FM Frequency is 517, 500 Hz
 >) FM Deviation is 10000, 10000 Hz
 ,) FM # of repetitions is 1, 1
 ;) FM Type (sinusoid=1 / chirp=0) 0, 0
 /) FM continuous mode 0
 p) Phase lock status (lock=1 / unlock=0) 0, 0
 z) Temperature in degrees C
 *) PLL reference frequency MHz 27.0
 +) Model Type
 -) Serial Number
 ?) help