

Windfreak MixNV Serial Communications

This information is preliminary 8/2012

Talking to the MixNV unit is done through USB via a virtual serial / com port. The drivers supplied by WFT must be installed on your PC before communication can happen. After plugging in the hardware the com port will need to be identified, then used for any subsequent communication.

The MixNV comes with software that uses these commands to easily control and program the device through its intuitive GUI, but some advanced users may want to make their own software and/or run on a different OS than Windows. These commands can be tested through serial communications terminals such as this free program: <https://sites.google.com/site/terminalbpp/> for Windows and other possible solutions for Linux and OSX. Also, the MixNV has been tested and works well with an Android based app from Google Play called “Android USB Serial”. This test was performed on a Samsung Galaxy Note 1.

The first character of any communication to the MixNV unit is the command. (It is case sensitive.) What this character tells the unit to do is detailed below. Ideally a “package” is sent all at once. For example a communication for programming the frequency of the LO to 1GHz would be sent as “f1000.0” (without the quotes).

For commands that return information from the MixNV unit, such as reading the firmware version, it is advisable to send the command and then read the bytes returned fairly quickly to get them out of the USB buffer in your PC.

- f) Frequency MHz 1000.0
- a) Power Setting (0-7) 7
- d) FM deviation (0-32760) 0
- r) FM burst repetitions (0-65535) 200
- t) FM mod step delay (uS) (0-65535) 500
- m) FM modulation control bit 0
- c) FM continuous modulation 0
- i) FM source (1=internal 0=external) 1
- b) Send one FM burst
- l) LO Mode (1=LO 0=Mixer) 1
- x) Reference (1=internal 0=external) 1
- e) Program EEPROM
- v) Firmware Version
- +) Model Type
-) Serial Number 0
- ?) help

Please keep in mind that the device expects the format shown. For example if you send simply just an “f” the processor will sit there and wait for the rest of the data and may appear locked up. If you dont send the decimal point and at least one digit afterward, it will have unexpected results. Also, please send data without hidden characters such as a carriage return at the end.

The FM routine is a loop which will run for the amount of time you set it to run and wont respond to USB during this time. Please keep the run time under 1 second. If you make a mistake and have a very long run time and then save the settings, plus save the FM continuous mod setting of c1, you could cause the device to not respond for a long time after boot. At this point there isnt much to do but plug in the device and send a “c0” and wait for the FM to stop.

After programming a particular setting, you may enter “?” to get the above list returned to you. The numbers that follow each setting are the actual values programmed. You may also type the command and then a “?” to get a single value back. For example an “r?” as taken from the above set would return a value of 200. This value comes back without a carriage return.

During development if the device seems to stop working properly, come back and always send a “?” and check all of the values carefully. For example, a value of “0” returned for x means the MixNV is expecting an external reference and it has nothing to lock to.