

ADALM-Pluto drift measurements

Matthias, DD1US, 25.03.2019, Rev 0.1

Hello,

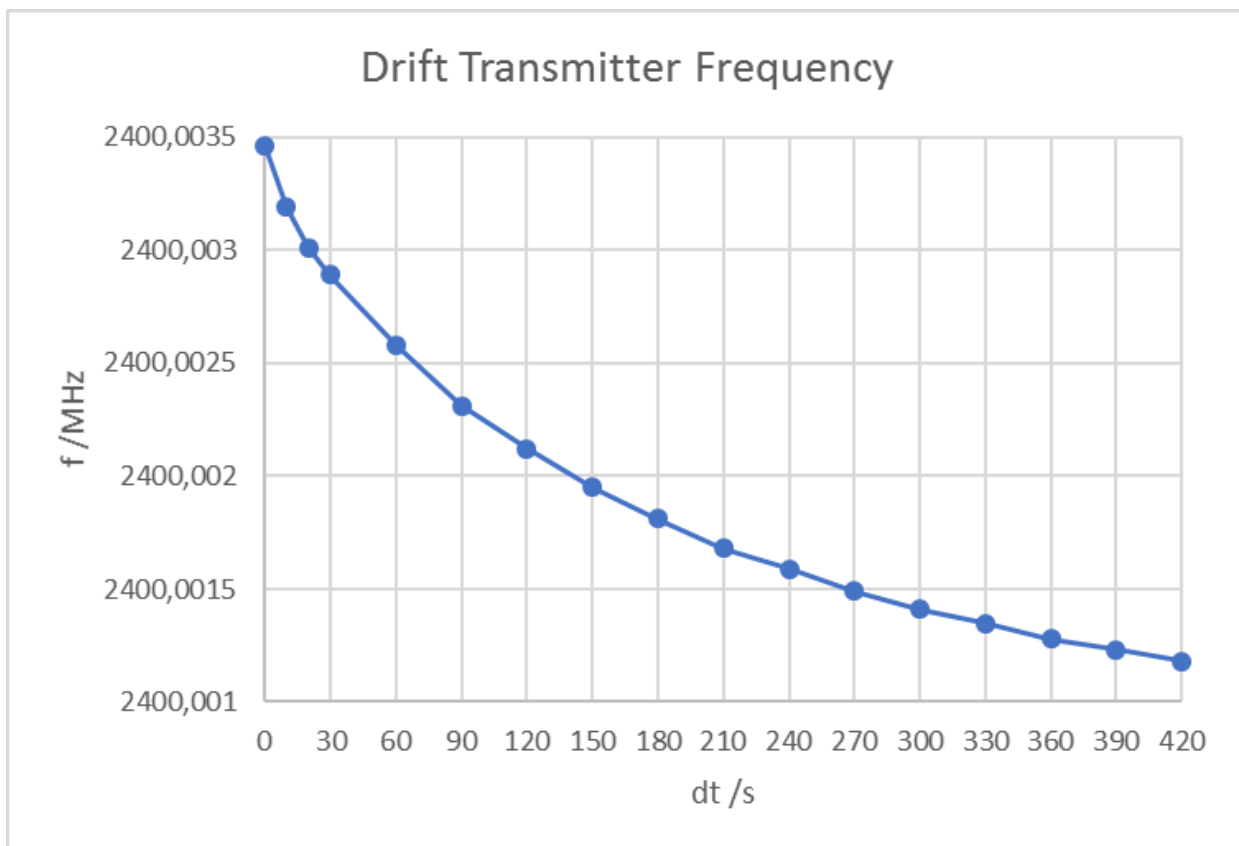
Recently I made some measurements on the ADALM-Pluto with respect to its drift, when switching from RX mode to TX mode.

The ADALM-Pluto was not modified, i.e. the standard reference oscillator was used.

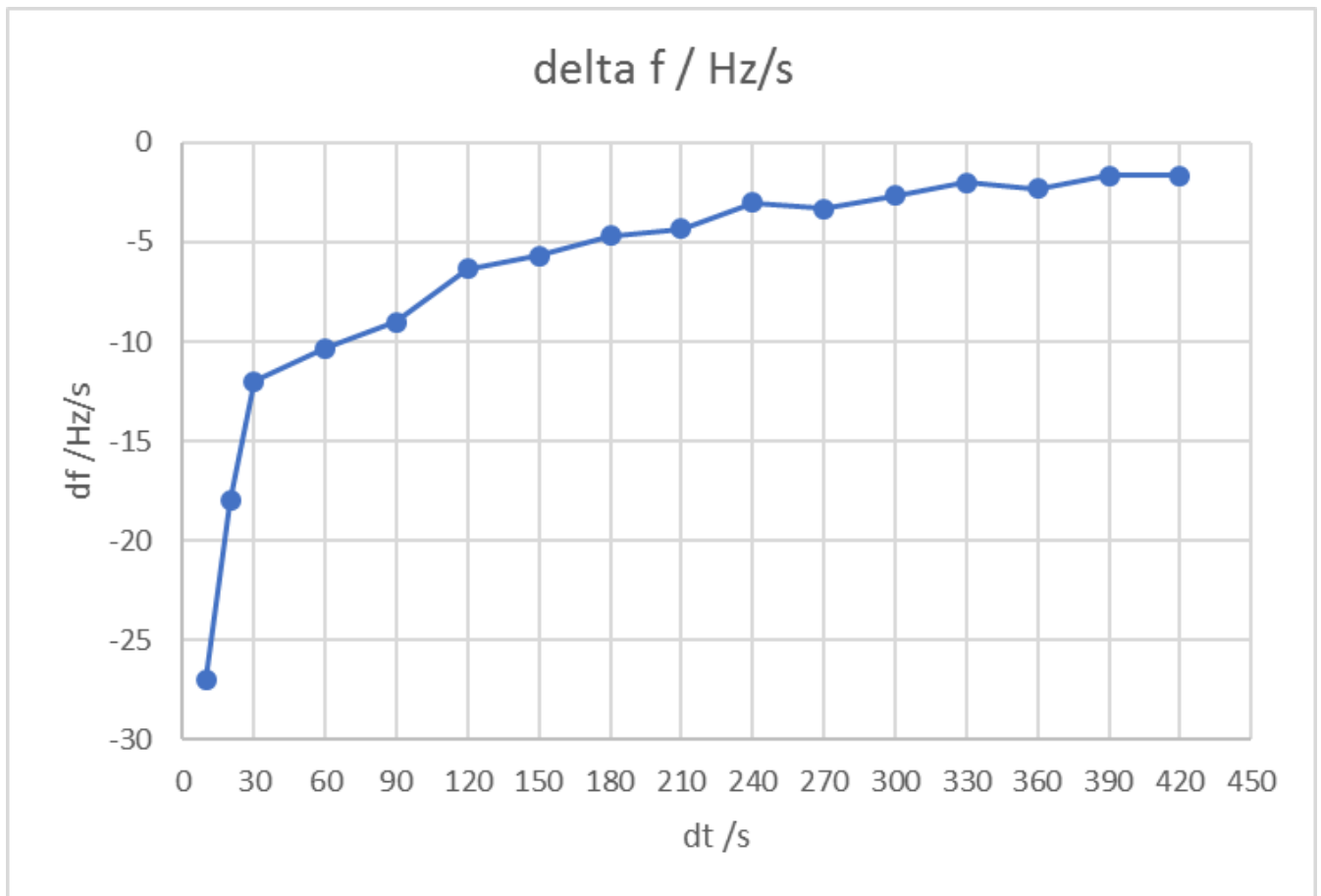
The software used was SDR-Radio.

During the tests USB was used with 1 test tone set at 700Hz with a relative level of 0dB (setting in SDR-Radio). Gain, Master Gain and Drive level were all set to 100%. Transmissions were conducted at 2.4 GHz.

The first diagram shows the absolute frequency in MHz versus time with $t=0s$ being the time when the transmission was started.



The second diagram shows the drift rate i.e. the change in frequency per second versus time.



As can be seen, the drift of the Pluto during TX mode is very high. Especially in the first 30 seconds after start of transmission the drift is higher than 10 Hz per second. In my opinion too high to use it for SSB or CW mode. Even after 3 minutes the drift was still 5 Hz per second.

The measurements were done several times and were consistent but they were all done at the same unit. Possibly there are variations between different units.

I am always happy about feedback or question. Please send them preferably by Email to the address given below.

Best regards

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