

Building a bench 10MHz reference: part 2

Posted on sam. 19 mars 2016

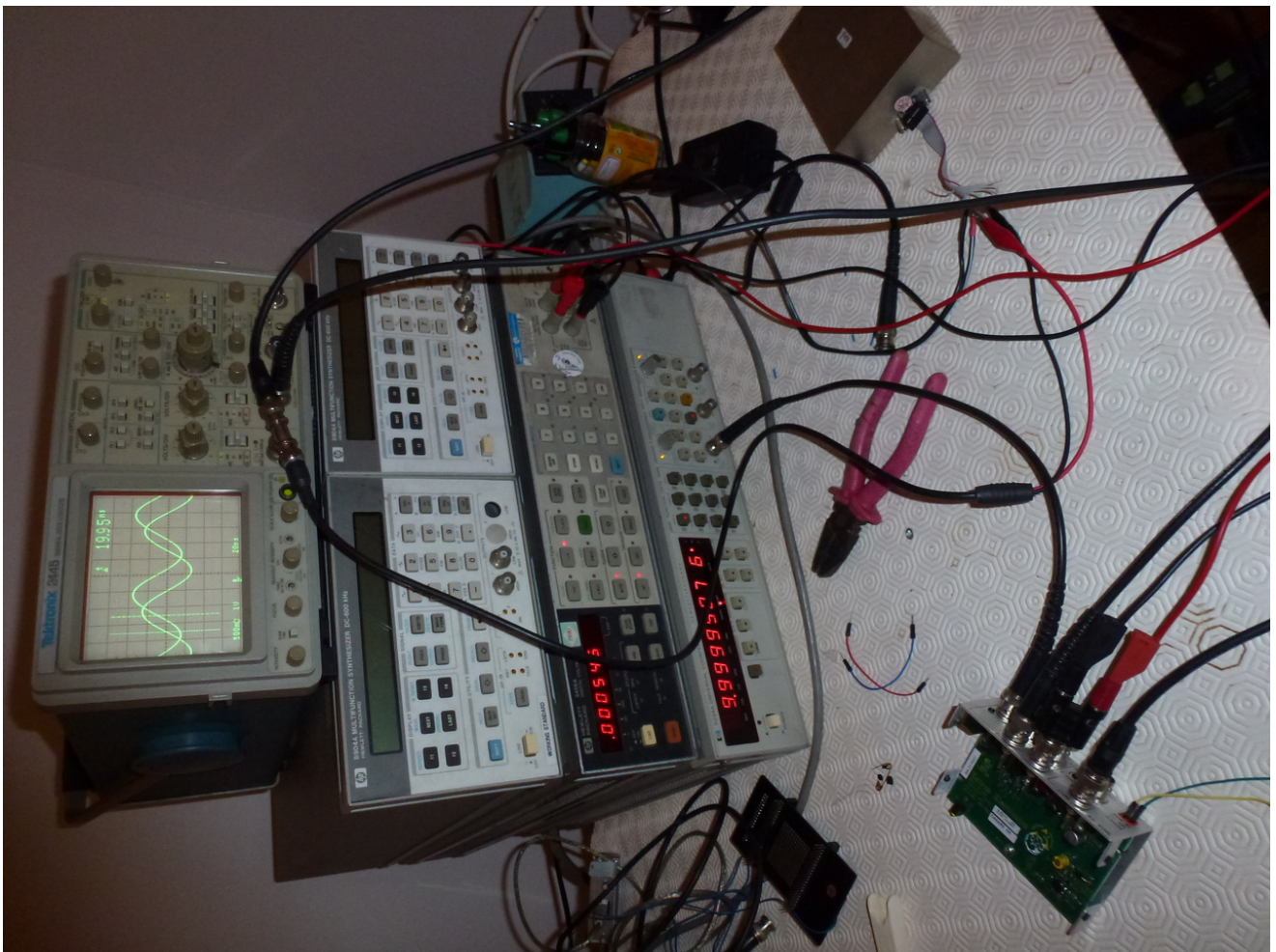
This is a quick follow-up of the first part of this series.

I've received a few parts from digikey, including a couple of 22 μ H Sumida CLS62 inductors (I bought two of them in case I f**k up one of them trying to solder it with my Weller WS50 iron).

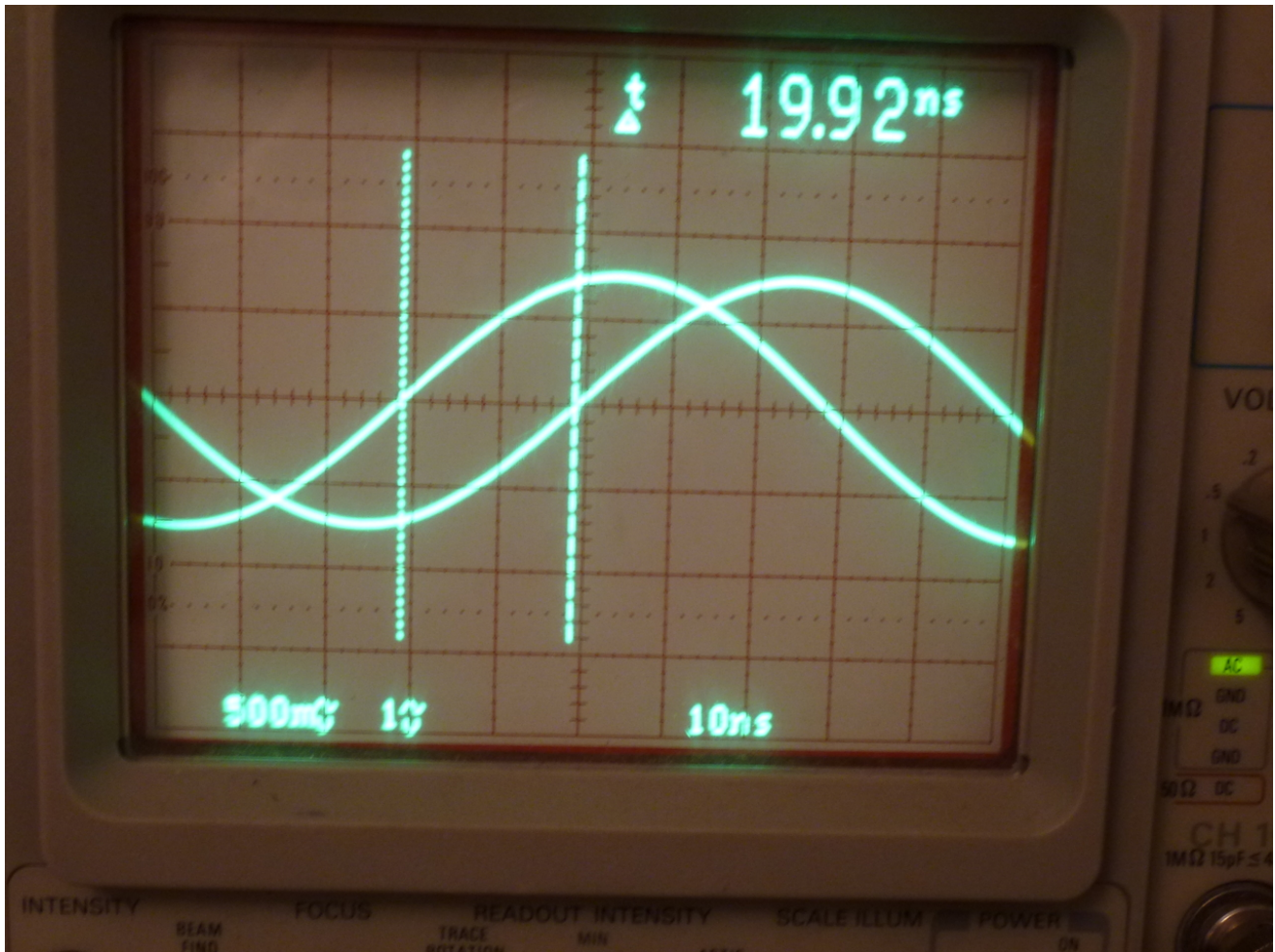
Desoldering and soldering SMD parts without an air flow station is a bit tricky, but eventually I succeeded in replacing the broken inductor.



Now the "video" amplifier works like a charm. The 10MHz signal is nicely amplified:



At 10MHz, the amplifier dephase the signal of about 20ns (ie. 72 deg). We can also note that (the input impedance of the Extron amplifier is set to 75 ohm, while my scope is at 1 Mohm; I should try using the input of my scope set at 50ohm) that the amplification factor is exactly x2.



What I need to check carefully now is if all the outputs of the amplifier are perfectly in phase.

It's amusing that a few days ago, FlyingHacker did post a new thread on the EEVBlog forum in which he explain that he uses exactly the same distribution amplifier to provide a 10MHz reference to several test equipments. Exactly what I have in mind with mine!

One thing I will probably not do is adapting the input/output impedance (from 75 ohm to 50 ohm). I'm pretty sure it will work fine as is. We'll see if it provoke some side effects (especially on the phase of the signal).

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10MHz Bench Reference Standard

1. Building a bench 10MHz reference: part 1
2. Building a bench 10MHz reference: part 2

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1. Building a bench 10MHz reference: part 1
 2. Quick overview of the HP5334A Universal Counter
 3. EIP 545B RF Frequency Counter - Part 3
 4. HP 34970A Data Acquisition Unit - communication protocol
 5. EIP 545B RF Frequency Counter - Part 4
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