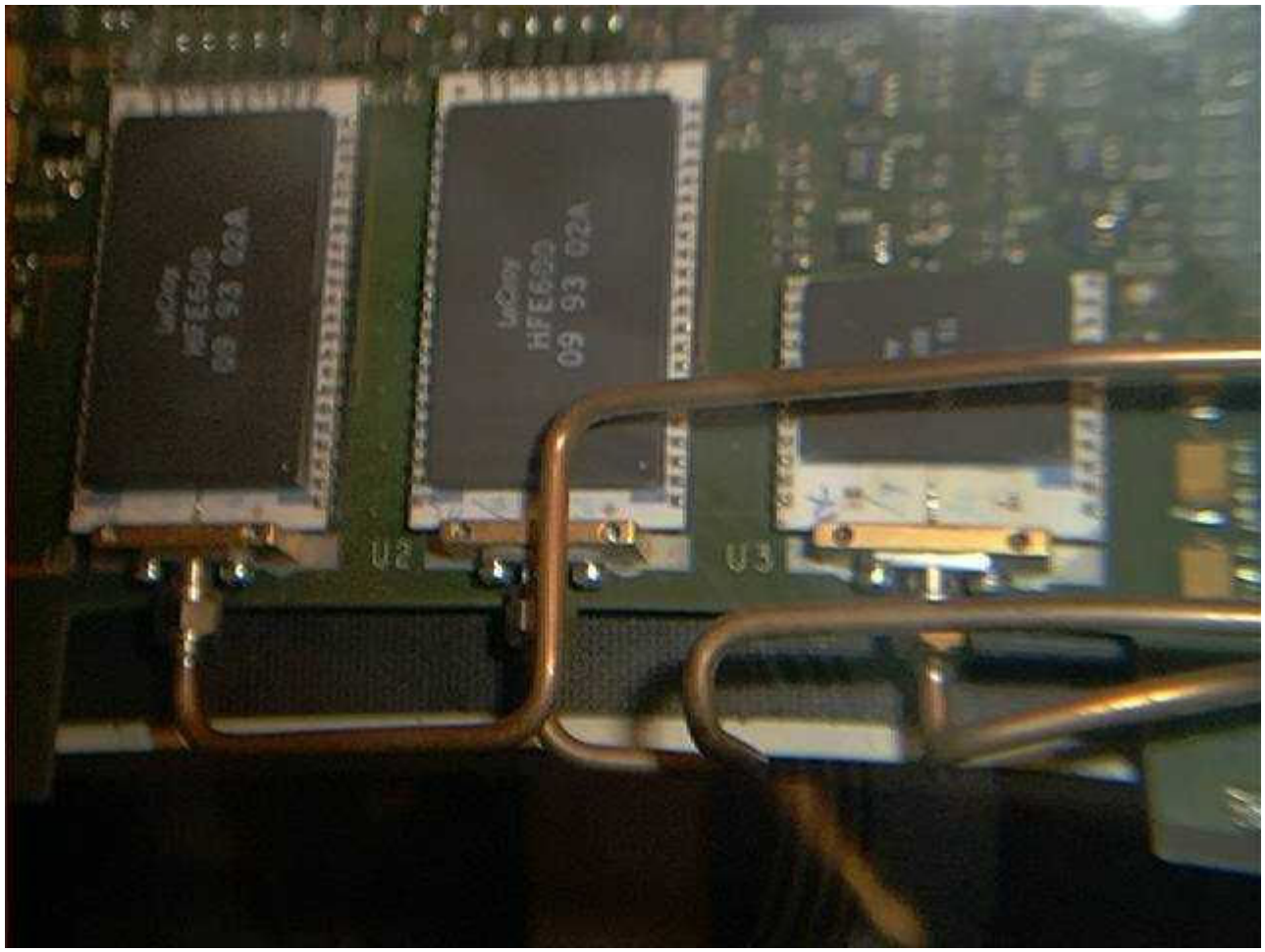
LeCroy 7262 4GHz Plug-in

Looking at the front of the 7262. All connections are made with SMAs.

The 7262 was the high 4GHz plug-in for the 7200. It can sample up to 100Gs/S in RIS mode and 40Ms/S in single shot mode.

Looking at the front end of the 7262.



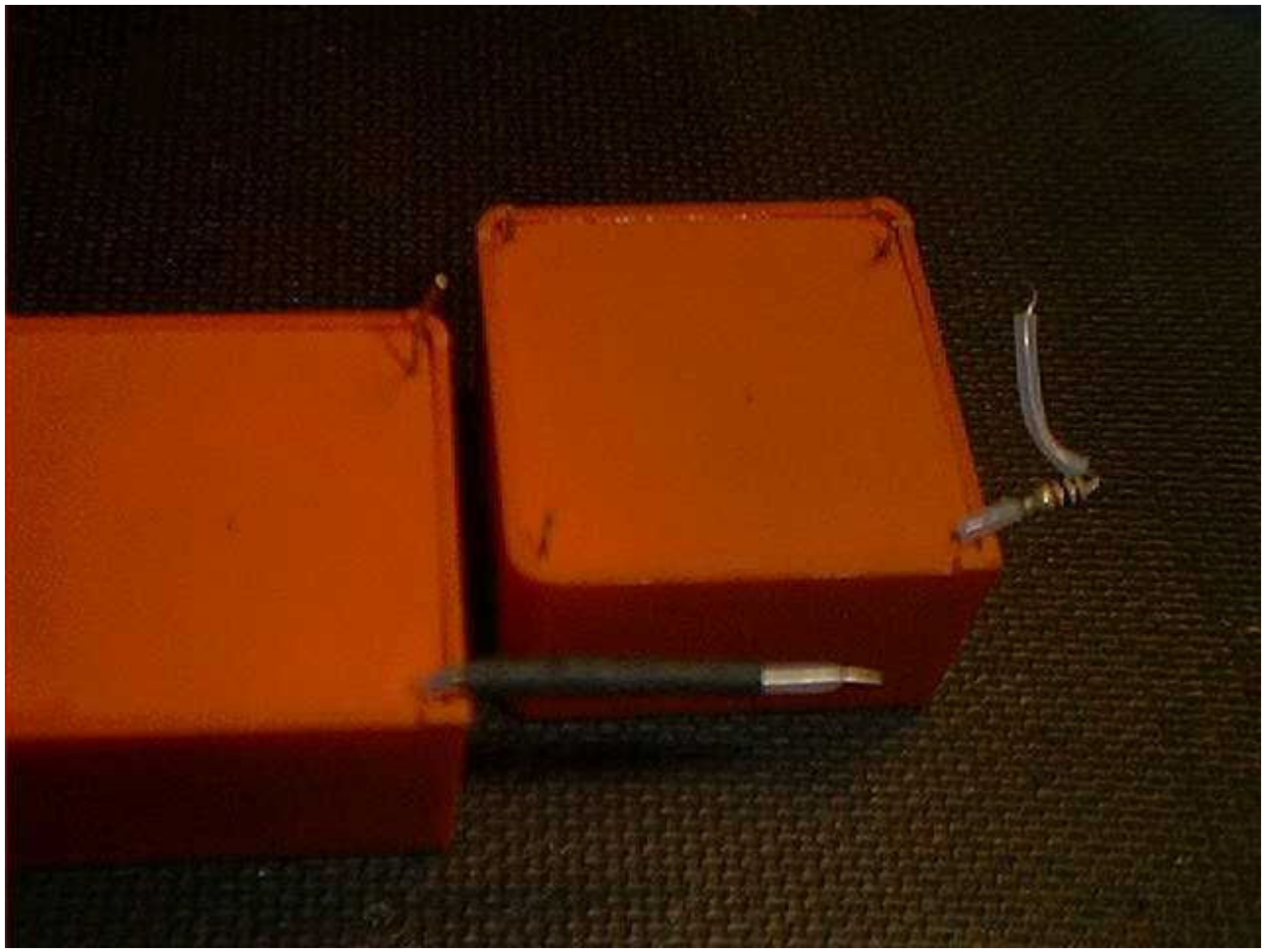
Closeup of the hybrid circuits and launch points.

Showing the lithium battery (orange colored block).

The 7262 uses a lithium battery that is located on the power supply card. As the battery voltage drops a message may be displayed on the 7200's screen "A: INPUT SHORTED IF POWER OFF-BATTERY LOW(S)". While a low battery down not effect the normal operation of the unit, it does limit the amount of protection provided to the inputs.

Renata still sells the batteries and had them instock when I checked. From what I am able to determine they were the only supplier for the battery. The shelf life is about 10 years. It did not look like my units had ever had them replaced, so I would guess the life while installed is in the order of 4-5 years.

- Renata 1000-07 specification
- Renata's website



On all three of my boards there is a 1K resistor in series with the positive terminal. I have used shrink tube on the new battery to help protect the resistor.

My third 7262 needed a lot of TLC to get running. After cleaning up the boards I had to replace the backplane connector. This is made by ERNI. The main shell is PN# 593 817. The power contacts are PN# 913 716. In my unit the coax cable was also missing so I ordered the coaxial contact PN# 594 207. This is to be used with RG316/U cable that the LeCroy uses. The encoder was also damaged on this unit. The original encoder is a 12 position, normally open, no stop, break before make, 6mm dia. shaft 12mm length. The part was originally made by AB Elektronik in Germany. I called them directly and they still had the switch in 6 or 20mm shaft lengths. These people were very nice to deal with. There were some communication problems as I do not speak German, but we were able to work thought those problems.

- ERNI's website
- AB Elektronik's website

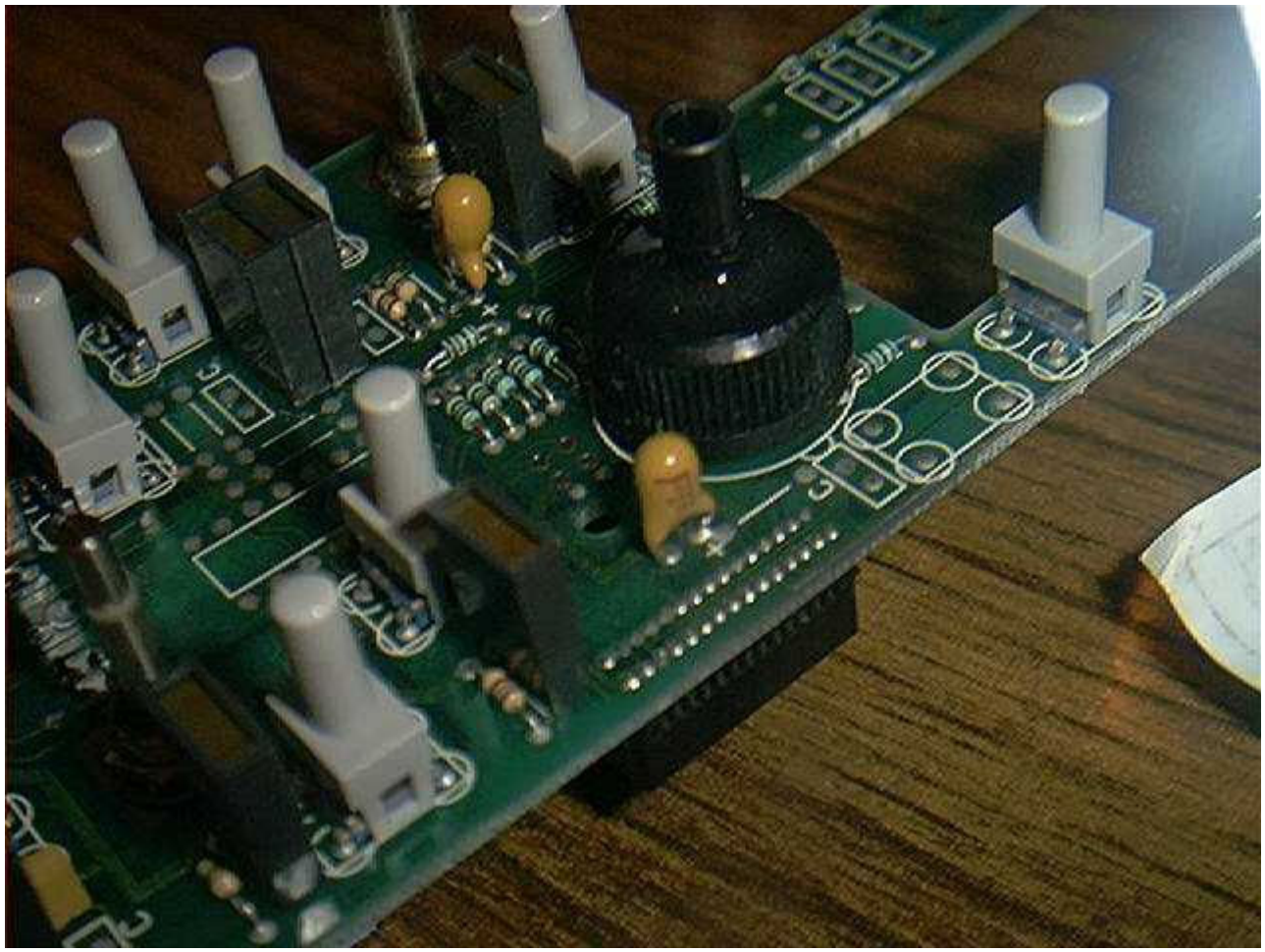
The new home made cable for the third unit. Thanks RS Electronics!!

- RS Electronics website

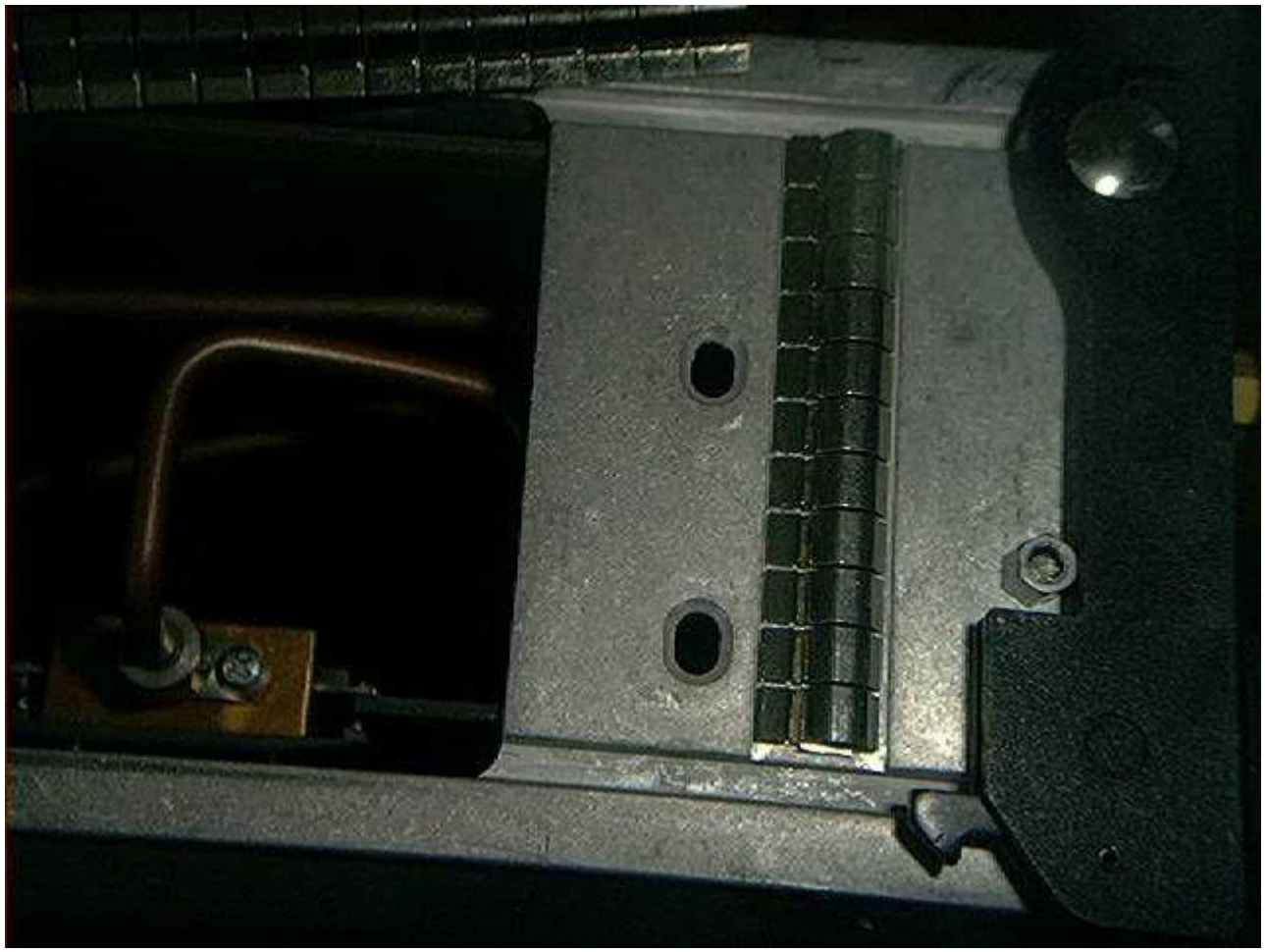
New encoders and edge connector shell.

For some reason I have seen several encoders become damaged. My guess is because of poor handling, but to help guard against this I used some epoxy resin to make a fillet around both encoders at the base of the shaft.

New encoder

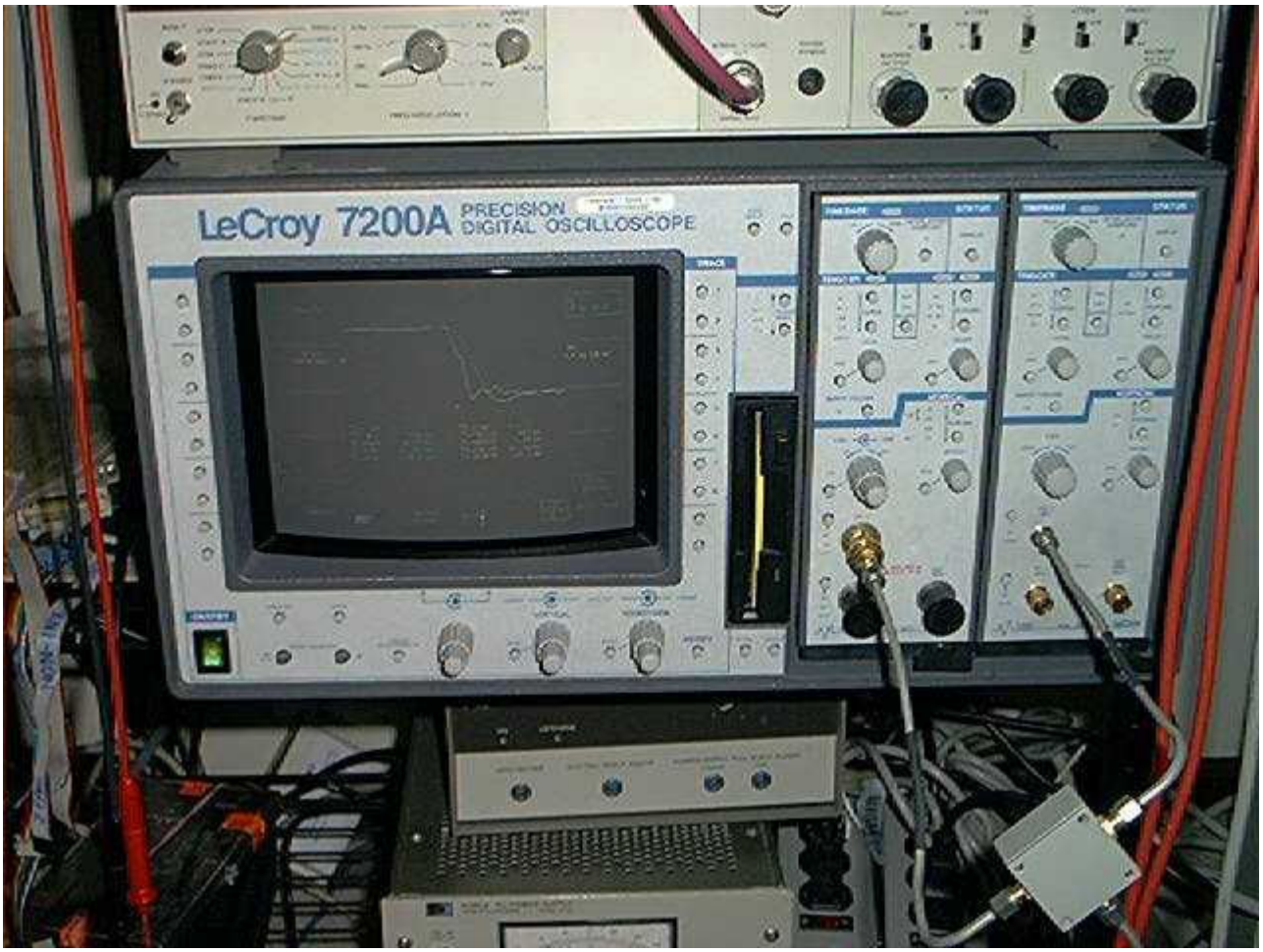


Better shot of the resin on the still second encoder

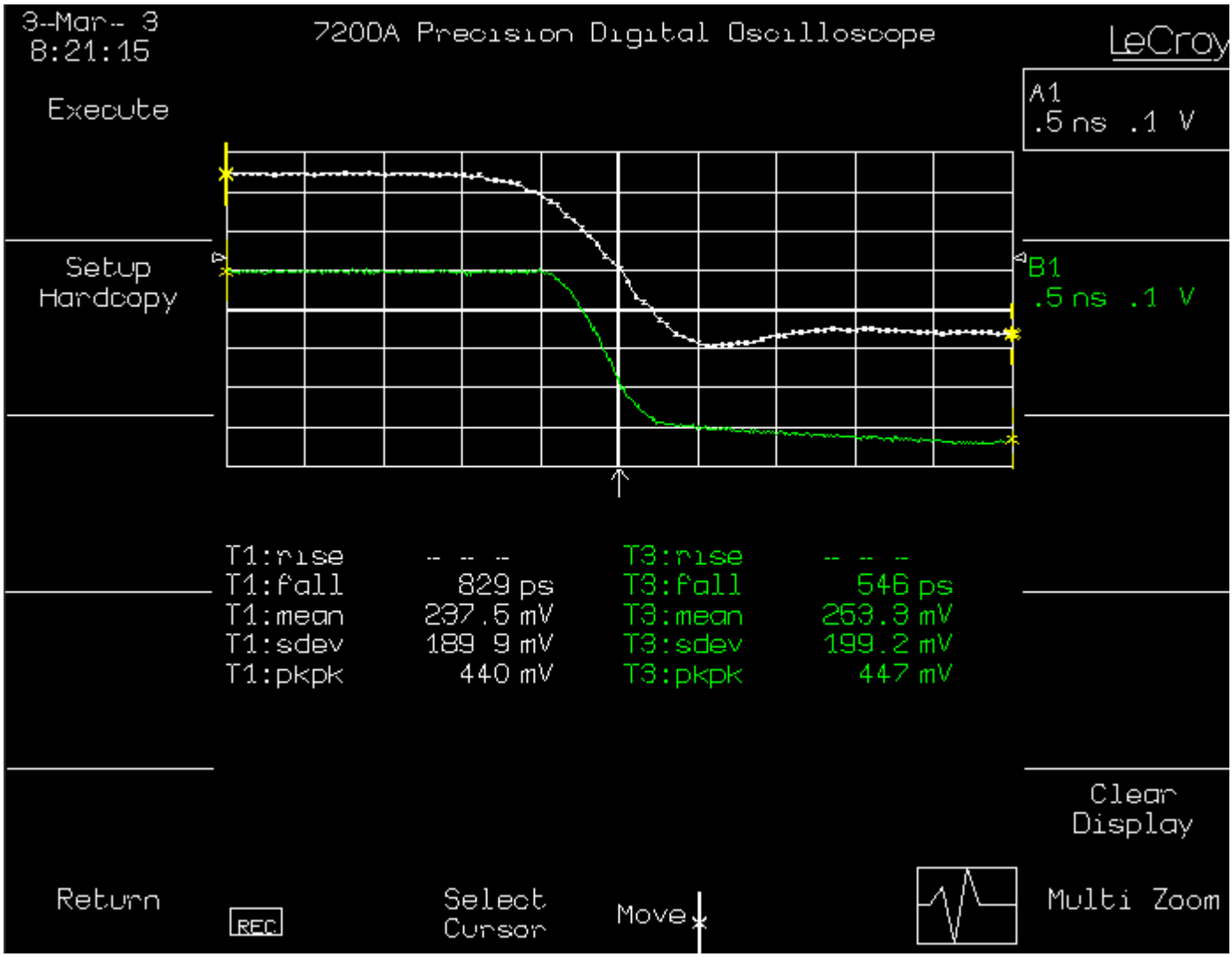


Adding the new gaskets. It's interesting that these also seem to become damaged often on the plug-ins. I have had to replace them one a few units.

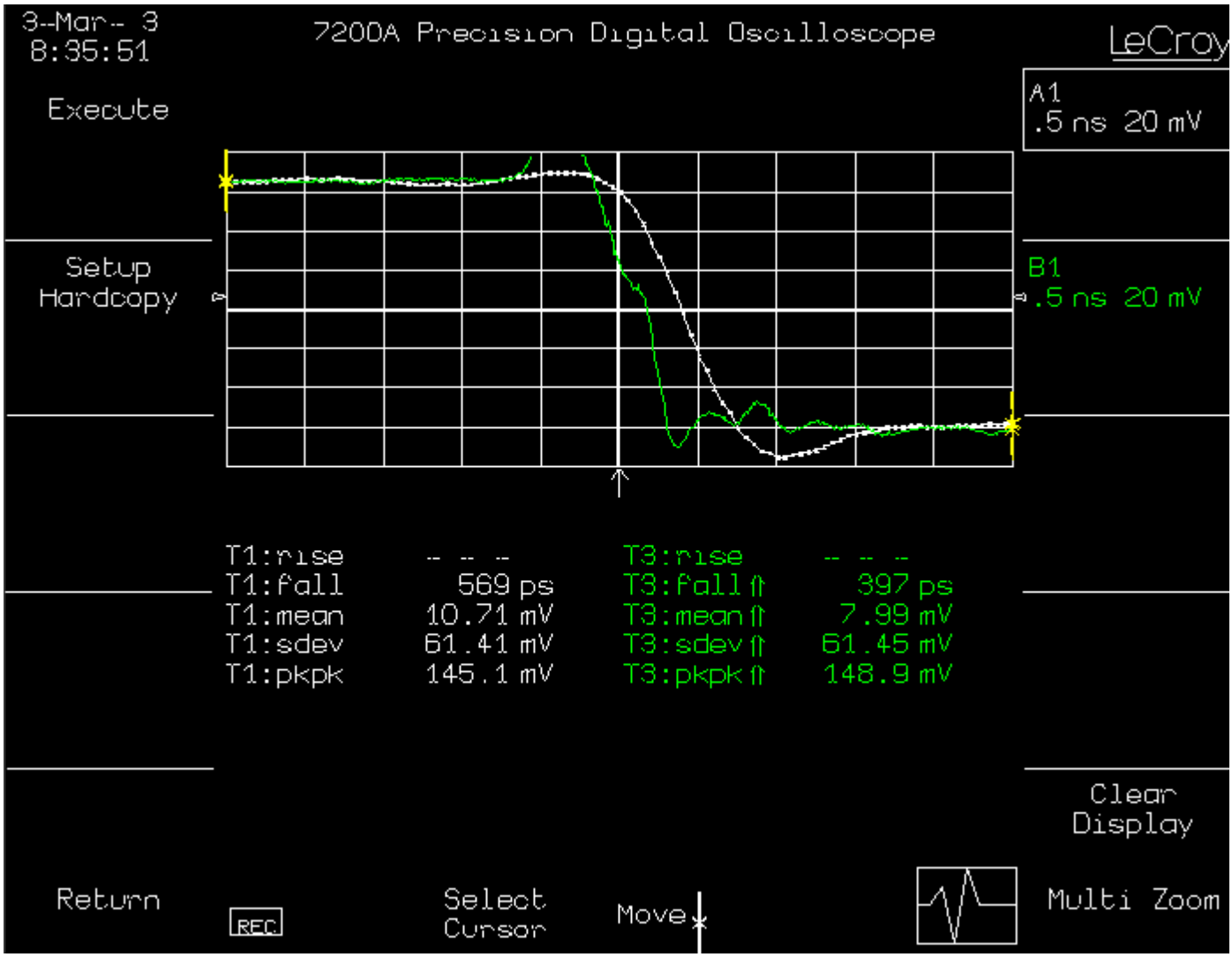
With two of the 7262s now working I did some simple side by side comparison to my 7242B. Taking the output from the test device into a power divider and into the two plug-ins. The A plug-in is the 7242 while the 7262 is installed as B.



The basic test setup



Showing the output from an LVDS driver

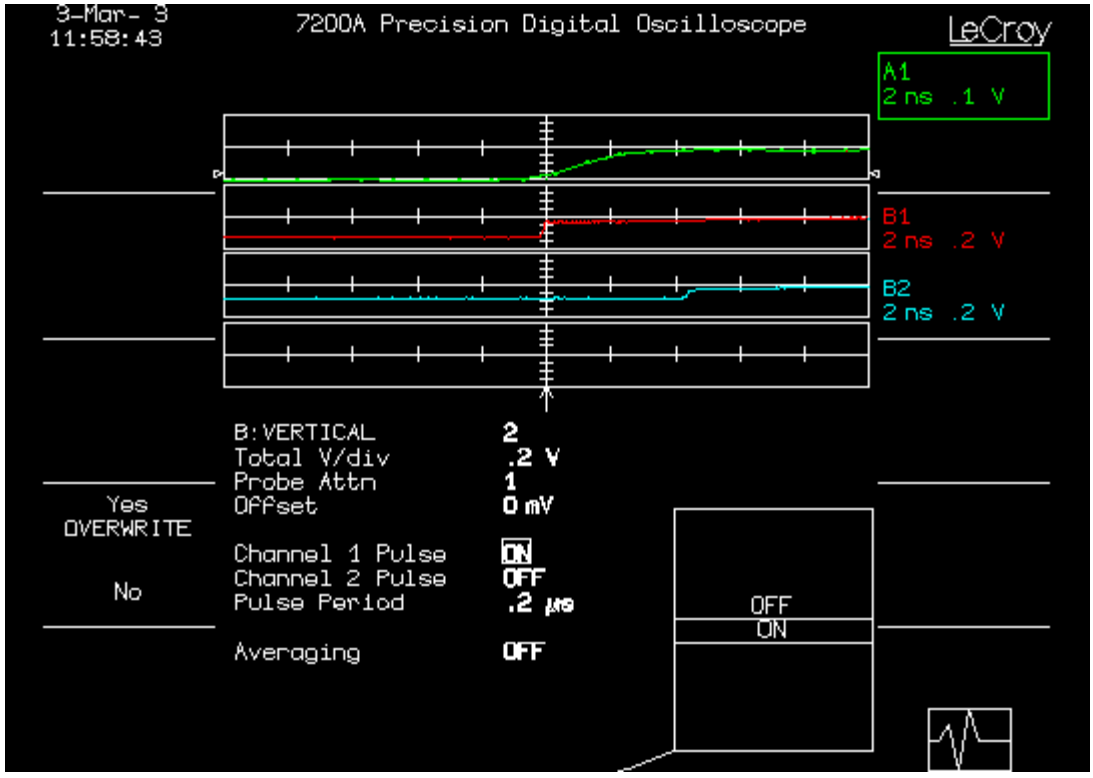


Showing the output from an ECL gate

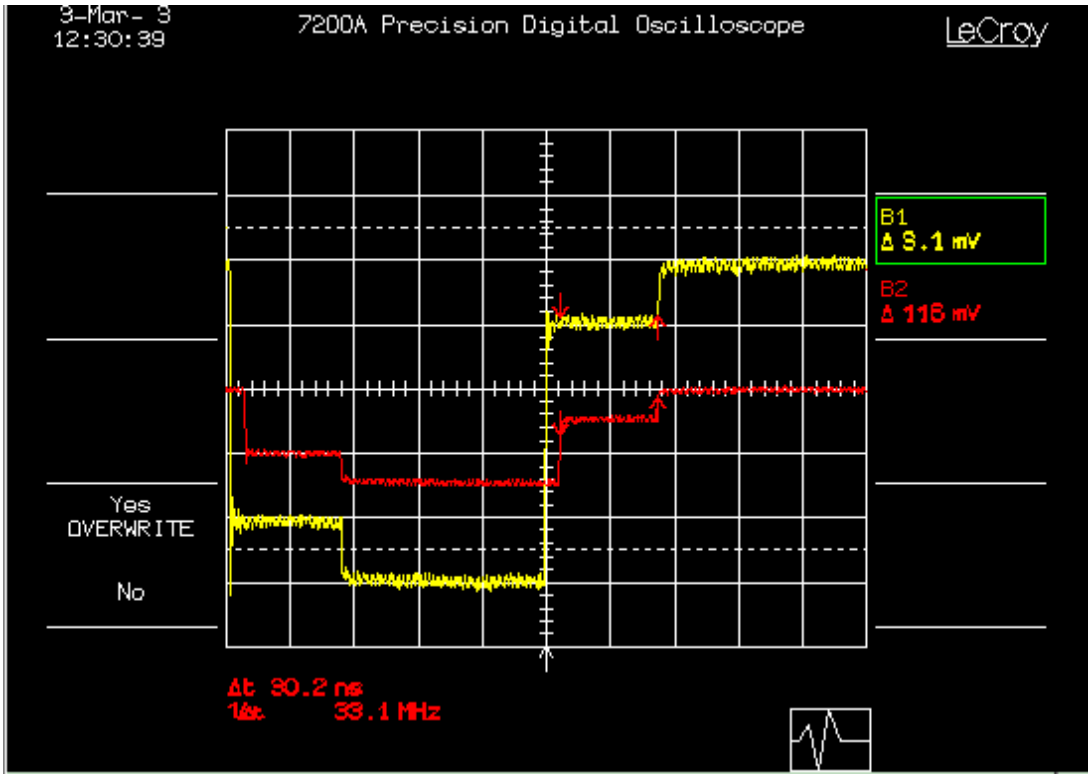
I had a person ask about the TDR features of the 7262. The 7262 is able to output a pulse from the A and or B inputs. The specifications are as follows:

TDR

Pulse Outputs:	Independently selectable on CH1 and CH2
Trigger Source:	PULSE or Selected Channel
Duration:	200 nsec to 1 sec square wave period selectable in a 1, 2, 5 sequence
Falltime	100 psec
Amplitude	-400 mV to GND
Overshoot:	30% on negative edge
Aberrations	5% after 2 nsec



Setting up the TDR generator. Channel one is looking at the pulse from 7242B.



Measuring the delay of the test cable with the Pulse trigger selected.

In this case I am measuring a 127" or 3.23 meter section of MIL-C-17 RG-400 50 ohm PTFE cable. The dielectric constant is 2.0 for this material.

Using TD = [X * SQRT (Er)]/C

TD is the propagation time delay

X is the length of transmission line in meters

C is the speed of light in a vacuum (2.998 x 10E8 m/s)

Er is the dielectric constant

So TD = [3.23 * SQRT(2)]/2.998 x 10E8 = 15nS

Because the pulse has to travel down the cable and back we need to multiply this by two for a total round trip of 30nS. Where is all the 200pS of error from? I did not take into account the splitter and connectors.

The 7200A also has built-in software to perform TDR measurements. But I think I have bored you enough for now.