

# Re: Tektronix 2235 Scope High Voltage Problem

**Source:** <http://sci.tech-archive.net/Archive/sci.electronics.equipment/2004-09/0422.html>

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**From:** TekMan (and7\_at\_bigfoot.com)

**Date:** 09/28/04

Date: 28 Sep 2004 00:01:28 -0700

Jim Yanik <jyanik@abuse.gov> wrote in message  
news:<Xns9571D407F42C1jyanikkuanet@204.117.192.21>...  
> and7@bigfoot.com (TekMan) wrote in  
> news:6a624601.0409262333.1bb8b871@posting.google.com:  
>  
>> Jim Yanik <jyanik@abuse.gov> wrote in message  
>> news:<Xns957089733DC52jyanikkuanet@204.117.192.21>...  
>>> bobd426@yahoo.com (Scibuff) wrote in  
>>> news:6fa04d1c.0409251726.6f1d16c@posting.google.com:  
>>>>  
>>>> It looks like my faithful 2235 has bit ths dust! When powered on,  
>>>> the power LED only pulses on/off about every second and the CRT has  
>>>> no light. Using the Service manual, I got as far as restoring the  
>>>> power LED operation by disconnecting the lead from T948-p23 to  
>>>> U975, which I assume is the HV multiplier, but have no details on  
>>>> it. The 2 5.1K resistors off U975-p4 are good and disconnecting  
>>>> C975 and C976 one at a time does not allow the Power LED to come on  
>>>> steady.  
>>>>  
>>>> Help please!  
>>>>  
>>>>  
>>>>  
>>> The HV multiplier has a red lead that goes to the front of the CRT.  
>>> The multipliers do fail occasionally.  
>>> You will NOT be able to order one from TEK,they consider this model  
>>> obsolete.A parts scope will be your only source,I believe.  
>>>>  
>>>> The HV mult develops the -2960 cathode V from the pin that feeds the  
>>>> 5.1K resistors,the anode V comes from the pin that the red HV lead to  
>>>> the CRT is connected to.  
>>>>  
>>>>  
>>>> Are your low voltages proper when you disconnect the HV mult.?  
>>>>  
>>> The HV multiplier is a x6 type. Do as Jim proposed and try to get a  
>>> parts scope.  
>>>>

> > *It is possible to build the the HV multiplier from discrete parts*  
> > *(diodes, caps, etc), but is really a tedious task and requires HV*  
> > *expeirence. I did it a couple of times, but would recommend this only*  
> > *to someone with a lot of repair experience. The HV is nasty, so*  
> > *careful soldering and isolation technique is a must.*  
>  
> *And you have to build it to fit into the available space and not arc to*  
> *something else.*  
> >  
> > *you're better of with a commercial build multiplier from a parts*  
> > *scope.*  
> >  
> > *hth,*  
> > *Andreas*  
> >  
>  
> *I believe the multiplier is a X-FOUR,not six. My 2215 schematic shows X4.*  
> *I also believe he could adapt a HV mult from a 1700 series TEK waveform*  
> *monitor,they're about the same size,but don't have the internal cathode*  
> *supply diode,no big deal. 152-0900-00,and probably still available from*  
> *TEK.*

Special case was not necessary to prevent arcing. "Rounded" solder blobs are much more important to prevent HV arcing due to corona effects etc.

Insulation: A couple of spray paint named Plastik70 (a special brand forHV, a german supplier manufactured this. Don't know if it is still for sale).

Multiplier: It's a sextupler ( x6 ) in the 2235, but a quadrupler ( x4 ) in the 2215 – trust me :)

hth,  
Andreas