

2.

get a clean pulse from the output of I.C.3D. This control is not touchy and will work OK over a wide range of settings.

Once these are set, switch the trigger source switch on your scope to the channel monitoring point 3 and increase the sweep speed to display 2-3 lines of video like in the lower drawing of point 3. Trigger should be on the upward going slope of the waveform. Switch this probe over to point 4 and adjust P3 so that the trailing edge of the wave is just a microsecond or so after the beginning of the horizontal sync interval. Move the probe to point 5 and adjust the width of the pulse with P4 so that the trailing edge is about half way through the burst. Now, ground point 8. Adjust P8 so that you get a stable picture without worrying about the vertical sync. The picture may roll.

Switch the trigger back to the probe on the input and put the other probe on point 6. Unground point 8. Make sure the waveform for point 6 is present. If OK, check point 7. When OK, put the probe on point 8 and adjust P7, your front panel vertical stability control so that you get a single vertical pulse. At point 9 adjust P6 so that the trailing edge is at the beginning of the vertical interval and that it does not overlap the picture period at all. At point 10, adjust P5 so that the pulse ends sometime before the start of the next picture interval. It will jitter a bit so don't try to place it at the very end of the vertical interval. The newer sets are not all that fussy as long as there is an interval. Older sets may be a bit touchy in the vertical sync, but no more that they would be playing a tape with the so called "Copyguard".

With this done you should have a nice stable picture. If not, you have either done something wrong, had a part give up on you, not read the instructions, fallen prey to Murphy's Law(which can overrule Ohm's law anytime) or the cable TV companies have done something nasty. Of course any change would show up in the waveform of the input signal. If they changed it, stay tuned for a modification to this circuit.

Of course, if your area is served by a cable company using something other than the Zenith Z-Tac scrambling system this circuit may not work. All cable companies owned by Rogers use this system which they claim is the hardest to beat in the country. It is. The others were much simpler. Some took only \$1.00 worth of parts and were beat within 2 hours of the debut of Pay-TV. This occurred where the cable company cheated out and used a simple trap system. This occurred in Winnipeg and Edmontonians served by QCTV were able to get it too. My Edmonton contact tells me that 7 turns of #22 hookup wire in series with the input of your converter along with a 20-200pFd tuning capacitor across the line brought it in nicely. Minor retuning was needed for each Pay-TV channel. The wire was wrapped around a pencil. The cable companies, after having 40% piracy have stated that they will change systems in the future but I do not know if this has happened yet.

This circuit will not work with sine-wave systems but there are so many sine wave kits sold in the ads in Radio-Electronics, its not funny. I do not recommend going into commercial production of these circuits. If they get out of hand, the scrambling will get tougher. If only a few malcontents(the entire electronics profession) build them, the piracy rate stays low, the cable companies are happy and no one gets hurt. If every person can buy one, we may kill the goose laying the golden egg, though C Channel sure didn't need us to turn belly up and die.

This is a nice little project to build for your self, but it is enough of a pain in the rear that I am sure you will resist the temptation to make one for Uncle Fred unless of course he has a substantial estate and you are his favorite nephew.

If you get into trouble with it, just remember that I warned you at the top of the previous page. If they come down on you, I do not want to know you. Paranoid? Yeah, a bit, but if something comes into my living room and someone else tells me I can't watch it, this is like a challenge to a duel. The devil in me tells me that I have a talent to do things that only a small portion of the masses can do for themselves. I feel I must rise to the challenge even if 90% of the programming is crud. Besides, it impresses the hell out of the relatives and any other poor schlep who has to pay money to watch uncut movies.

Anyhow, keep your soldering iron hot, your chin up, walk softly and don't believe everything you read in the newspapers.