Mute This Topic (https://groups.io/g/TekScopes/ft/7642382?csrf=5513314409256117711&mute=1&p=Created%2C%2C%2C20%2C2%2C0%2C0)

Questions about CG551AP Scope Calibrator

Date (https://groups.io/g/TekScopes/topic/7642382?p=Created%2C%2C%2C20%2C1%2C0%2C0)

victor.silva

2009-12-03 (https://groups.io/g/TekScopes/message/43269)

I know it as a fact that the US LEMO warehouse is out of the connector required for a CGxxxx because I purchased all their stock this year. There may be some in the pipeline if you can find the right distributor. I checked on the lead time for complete connector from Switzerland and it was over 10 weeks.

I have no cables left. All the Lemo connectors I purchased were assembled into cables and sold.

--Victor

Reply Like More

cmbath

2009-12-03 (https://groups.io/g/TekScopes/message/43268)

I think you will find the following is true:

The CG5001 is designed to work with either a TM5003 or TM5006.

The CG551AP is designed to work with either TM 506 Mod JB or TM515 Mod UB or RTM 506 Mod JB.

The CG551AP will work in a TM506 and other TM500 series mainframes that have a minimum of 3 slots.

The CG551AP is the same as the CG5001 with the following exceptions:

The label

The CPU board has a number of links that route the GPIB connections to the unused pins of the normal mainframe connectors. (This is for use with the TM5XX mainframes above that have GPIB provisions). These links are not connected in the CG5001.

The CG5001 has a connection between the GPIB connector (J1111) on the CPU board and what I suspect is a small PCB (does not exist in the CG551AP) mounted on the next board up from the CPU board to allow connections to be made to the GPIB connectors in the TM5XXX mainframes.

The aluminum panel between the CPU board and the next board up (A8 high edge) has a cut out in it for an internal GPIB connector.

The rest of the PCB's should be the same.

All the TM500 series mainframes suggested as suitable for use with the CG551AP I think will have GPIB connectors and fans. So if you use the CG551AP in say a TM503 you need to ensure that it will not get too hot and you will have no GPIB.

The CG551AP probably has no GPIB functionality when used in a TM5000 series mainframe as the CG551AP uses the spare connections on the mainframe connectors for GPIB. These don't get routed to the GPIB connector in the TM5000 series mainframes.

The CG5010 and CG5011 have certainly been revised.

The Lemo connectors are not hard to get. Lemo connectors are made up of a number of parts most of which should be stock parts with the exception of the specific insert which may have to be ordered from Switzerland. I ordered 1 of these 2 years back, they had all the parts in stock except the specific insert which took about a week or so to come from Switzerland. Part #FGG2B802CLAM31Z. Note that this part had a slightly modified section to suit a smaller strain relief because the cable used in the original was probably a composite cable i.e. coax + 2 cores. I used RG174 coax for the hole thing. Total price $56.20AU so not too bad.

Where is Denis Cobley to answer questions like these?

Cheers,

Chris

Show quoted text

Reply Like More

Greg Werstiuk 2009-12-02 (https://groups.io/g/TekScopes/message/43262)

Not quite correct. To obtain the high stability oscillator in the first production years of the CG5011 one had to order it with Option 01. Eventually Option 01 was dropped and all CG5011's incorporated the high stability oscillator. I don't recall in which year this changed but if one checks the Tek catalogs, the change can be identified based on published specs.

-
Greg

Show quoted text

Reply Like More

victor.silva 2009-12-02 (https://groups.io/g/TekScopes/message/43261)

Steve,

I agree with everything you said except:

--- In TekScopes@..., "Steve" <ditter2@...> wrote:

> The various heads are necessary for leveled sine wave output (for BW verification) and pulse generation used to adjust amplifier aberrations.

I believe your statement apply to the SG5030 leveled sine generator.
The CGXXXX has no leveled sine output.

The SG5030 will NOT run without the leveling head. The CG551/CG5011 will run with a simple cable (with the exception of the fast pulse output). The cable for the CG is not so simple is uses a very expensive and hard to get LEMO connector. They cost about $50 each and there is currently no stock in US warehouses. Therefore it's a long lead item part from Switzerland.

I have both the older set of plug-ins, SG503, SG504, TG501A, PG506A and the newer set SG5030 and CG5011 and I must say I much prefer to use the newer TM5000 based equipment. Even operating it in a purely manual fashion scope calibration is much faster than with the old TM500 equipment.

--Victor

Reply Like More

ditter2

2009-12-02 (https://groups.io/g/TekScopes/message/43260)

The CG551AP was originally developed for a large military contract (US Navy I believe). This was before TM5000, so it would in fact work in a TM503 mainframe.

The CG551AP is not very reliable. The contract stipulated 1/2 rack width, and it was a case of shoving 10 lbs of s%@t in a 5 lb sack. The main problem was overheating.

The CG5001 kept most of the same circuits, revising a few of the failure prone ones. It was designed for the TM5000 series mainframes, so its internal temperature is cooler due to better DC supply regulation and improved forced airflow.

The CG5010 revised most of the circuits and has some more capability. It only runs in a TM5000 frame.

The various heads are necessary for leveled sine wave output (for BW verification) and pulse generation used to adjust amplifier aberrations.

While getting a CG calibrated and working may be an interesting exercise, I don't view these as particularly useful instruments for most of us in our home lab. Their real power is the fact that they are programmable. The intended market is large calibration labs and repair depots which need to calibrate dozens or hundreds of the same model of oscilloscope. Writing the software to program the calibration of any given model of scope requires a lot of time, so unless you have several of the same model to calibrate, you don't get payback. All of the functionality of the CG actually required for scope calibration(except for programmability) can be obtained with the manual TM500 calibration generators – TG501 for time mark generation, PG506 for amplitude calibration and amplifier response, SG503 or SG504 for frequency response sweeps. For lower BW scopes, pre-TM500 equivalents such as the 184 time mark generator, 191 constant amplitude sine wave generator, 106 square wave generator, etc work fine. For calibrating a single scope of a given model, these are even somewhat easier to use as the have real knobs for control, rather than keyboard entry.

- Steve

Show quoted text

Reply Like More

victor.silva

2009-12-02 (https://groups.io/g/TekScopes/message/43259)

Take a look at:

http://www.barrytech.com/tektronix/tektm500/tekcg551ap.html (http://www.barrytech.com/tektronix/tektm500/tekcg551ap.html)

http://www.barrytech.com/tektronix/tektm500/tekcg5011.html (http://www.barrytech.com/tektronix/tektm500/tekcg5011.html)

I have used the CG551AP in a TM503, perhaps the mainframes listed in the first link are required to support GPIB.

The CG5011 comes standard with option 01, even in cases where the there is no OPTION 01 sticker I found that the CG5011 still had the high stability oscillator. The CG5011 is almost 2 orders of magnitude more accurate on time marks as compared to the CG551.

--Victor

Reply Like More

Tom Miller <tmiller@...> 2009-12-02 (https://groups.io/g/TekScopes/message/43253)

Hi Stan,

I have a TM503 that I am in process of repairing with the intent of using it for the CG551AP. I intend to add the HPIB connector and a 5 MHz external reference port. I should have it ready by next week (waiting on parts) and will let you know with a follow-up to this post.

It does work in a TM504 shelf.

The very best place to get the service manual is from Artek Media. Get Dave's email from a search and let him know what your serial number is. There are several versions.

I don't feel knowledgeable enough to answer your other questions and will defer to the experts. I can help if you have an Error 91, 92, or 93 though. :(

Regards,
Tom

Show quoted text

Reply Like More

2009-12-02 (https://groups.io/g/TekScopes/message/43254)

victor.silva

The CG551AP is made to work with a TM503.

The CG5001 is essentially the same but it's the TM500x version.

The pulse head provides a very fast rise edge. The simple cable only will not allow the unit to go into fast rise mode. The edge mode available on the unit with just the simple cable installed is not fast enough to check Transient response.

The older version of the CG551AP has a rechargeable NiCd battery to maintain calibration constants. That battery is usually leaking and destroys a lot of components and traces around it. I would swap it out. Usually all calibration has been lost if this is the case.

A newer CG551AP may have a non-rechargeable Lithium which usually don't leak.

--Victor

Reply Like More

Stan

2009-12-02 (https://groups.io/g/TekScopes/message/43251)

I just purchased a CG551AP, and have a few questions about it:

1) My bench space is limited. Will the TM503 mainframe power the CG551AP or do I need the TM5003?
2) I do not (yet) have the pulse head for it. What additional functionality does the pulse head add for scope calibration?
3) Is there a downloadable operating and/or service manual available for the CG551AP?
4) Out of curiosity, what are the significant differences between the CG551AP and the other Tek scope calibrators, like the CG5001, CG5010, and the CG5011?

Thanks,
Stan

Reply Like More

1 - 9 of 9 1

(https://groups.io/g/TekScopes/topic/7642384?p=%2C%2C%2C20%2C0%2C0%2C0%3A%3A%2C%2C%2C0%2C0%2C0%2C7642384)

(https://groups.io/g/TekScopes/topic/7642377?p=%2C%2C%2C20%2C0%2C0%2C0%3A%3A%2C%2C%2C0%2C0%2C0%2C7642377)