Radar RL9 Bearing pulse error

- Posted by Mats Höwing on October 17, 2013 at 9:16am in Radar
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Hi,

I have got problem with my old RL9 radar. I've got "Bearing Pulse Error" and "Bearing Zero Pulse Error" messages on the display. The antenna is spinning and I have measured (With oscilloscope) the Zero BP on the display PCB, soo that one seems to be OK. The BP is measured OK (12V approx 900Hz) on the motor connector in the scanner unit but is not visible on the +12V as it should (only a noisy 50mV p-p signal). At this point I haven't succeded to come any further. There is unfortunately no circuit diagram available in the manual. Soo, my question is if there is any possibilty to get a electronic circuit diagram for this radar? With this the fault tracing will be easier. I have talked to the lokal Raymarine Service compay and the do not have any diagram either.

BR Mats

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Permalink Reply by Mats Höwing on October 18, 2013 at 2:49am

HI again,

I didn't get any feedback on my question. Is there anyone who could have an answer about the possibility to find a electronic circuit diagram for the RL9 (or ST50) radar? I'm struggeling i the dark trying to understand the consept for the bearing pulse design. Best regards /Mats

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Permalink Reply by Underway - Raymarine, US on October 21, 2013 at 12:27pm

No schematics are available for the RL9 radar unit. You might want to try contacting Radar Marine in Bellingham WA, they specialize in radar systems of that age, they can be reached at this phone number 360.733.2012.

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Permalink Reply by Mats Höwing on October 23, 2013 at 4:52am

Thanks for your information. Unfortunatelly Radar Marine couldn't help me either. No circuit diagram available... I have now by a lot of signal trace job coupled the BR signal from the antenna unit directly by an own lead to the point at the Display PCB where the BP is detected (try to find these without a circuit diagram!). And with this cable the radar works with no error messages at all. Obviously there must ne some fault in the system at the +12 V but I haven't been able to find out what after about 20 hours with the ocilloscope probe, disassembling, assembling, checking capcitors, resistors, transistor, diods ets. Everything else seems to work even the adjustment on the 12V source. It is just the superimposed BP signal on th e+12V that does not.This is a mystery to me. Maybe I should install and run the radar with the extra BP lead... If someone has an idea, please..

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Permalink Reply by Mats Höwing on November 17, 2013 at 4:47pm

Hi Again! Long time but I haven't given up my RL9 yet! I have still the issue with the dissapeared Bearing Pulse! THis pulse is supposed to be suprercharged on the +12V supply line between the display and the scanner units. It should be superimposed thru a capacitor 22nF. I got the signal on thre capacitor input side (12Vp-p) but on the 12V supply there is nothing. I have tested to supply the BP signal via a separate cable between the scanner and display PCB's cars and then the radar is fully funtioning! Why it does not work as it sipposed to do it's a mystery to me! I have earlier asked for support with electrical diagrams but they are not available. But I would really be helped if someone could tell me or show me how the super charged BP should look like on an oscilloscope picture. Is there anyone who could perform this measusremt or allready know the answer? The radar is an Raytheon RL9 which is the same as Autohlem ST50.

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Permalink Reply by Mats Höwing on November 17, 2013 at 5:25pm

Hi Again! 10 minutes after I wrote the last message I found the fault in the radar!

The missing BP was a result of a short cut in a inductor on the Display PCB, L1. It is now replaced with a new one (similar at least) and the radar is now fully fuctioning!. I have spent about 50-60 hours fault tracing, there was a few more faults in this machine... During the time I have made som scetches by hand over some of the parts, transmit pulse generator, gate driver. etc. Maybe these could be to some help for someone else later on. Who knows! send a message thru this site if you need them.

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Permalink Reply by Underway - Raymarine, US on November 22, 2013 at 9:33am

Thank you Mats for the very detailed information. This will help an RL9 user in the future.

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