



Service Bulletin

Bulletin No.: 23-NA-189

Date: October, 2023

INFORMATION

Subject: Information on Setting Up PicoScope to Diagnose Controller Area Network (CAN) Circuits

Brand:	Model:	Model Year:		VIN:		Engine:	Transmission:
		from	to	from	to		
BrightDrop	All Passenger Cars and Light/Medium Duty Trucks and SUVs	2020	2024	—	—	—	—
Buick							
Cadillac							
Chevrolet							
GMC							

Involved Region or Country	North America, Argentina, Brazil, Bolivia, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela, Europe, Uzbekistan, Russia, Middle East, Iraq, Israel, Palestine, Japan, Cadillac Korea (South Korea), GM Korea Company, China, Taiwan, Thailand, Singapore, Philippines, Australia/New Zealand, Egypt, Other Africa, South Africa
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Service Procedure

Important: Service agents must comply with all International, Federal, State, Provincial, and/or Local laws applicable to the activities it performs under this bulletin, including but not limited to handling, deploying, preparing, classifying, packaging, marking, labeling, and shipping dangerous goods. In the event of a conflict between the procedures set forth in this bulletin and the laws that apply to your dealership, you must follow those applicable laws.

Important: This technical service bulletin (TSB) can only be completed by certified repair facilities who have met all specific training, tool and equipment requirements pertaining to the vehicle Brand and Model serviced. Repairs must be performed by a technician who has successfully completed the required training.

Important: The data link connector (DLC) can only be used to monitor controller area network (CAN) bus voltages on vehicles without a Serial Data Gateway Module (SDGM). On vehicles with a SDGM, the CAN bus voltages must be checked at a module or in-line connector on the network.

This bulletin is designed to assist technicians in setting up the PicoScope hardware and software to monitor CAN bus traffic (voltage patterns) to aid Technical Assistance (TAC) and Field Service Engineers (FSEs) in diagnosing electrical issues present on network communication circuits. You must have GM Special Tools **CH-51450-B** as well as **CH-51450-LEAD-A** in order to follow the steps listed below.

Prior to following the steps listed below, you must run a vehicle-wide DTC check. Verify that there are U-codes, either current, or in history, and use the appropriate Service Information (SI) documents to verify which CAN bus the issue is likely to be on. Once you have determined the CAN bus that the fault is likely present on, carefully follow the steps listed below for your vehicle:

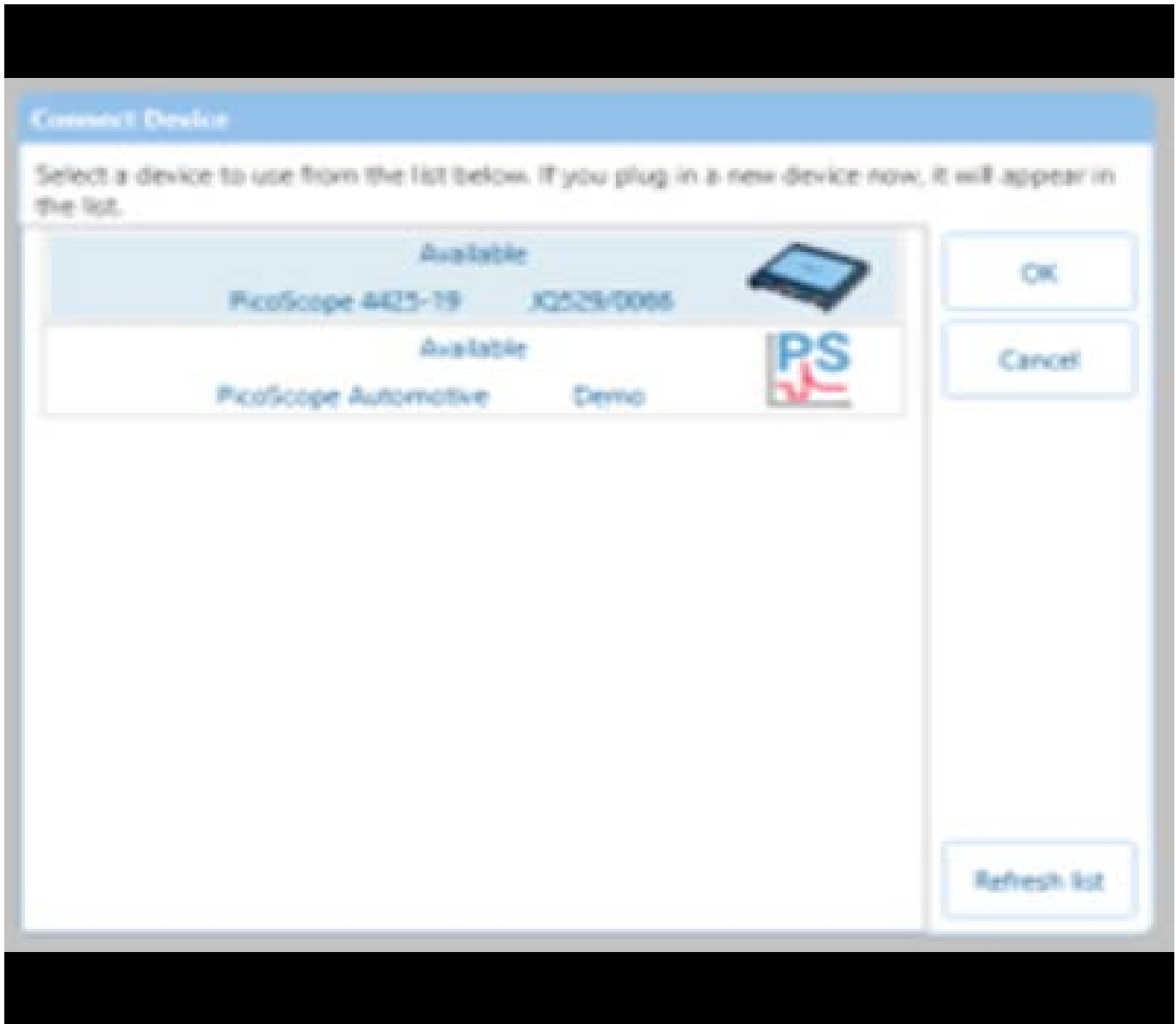
Important: Backprobing sealed connectors is not a GM-approved test method.

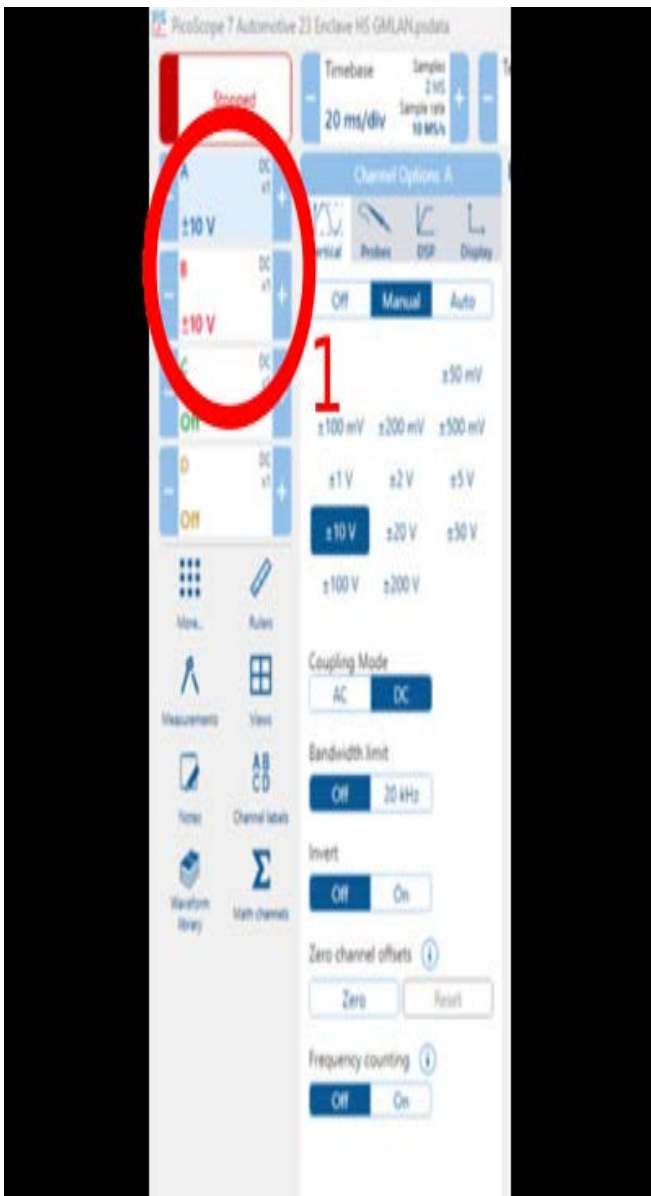
1. On your dealer computer, open the PicoScope 7 software. The icon looks like this:



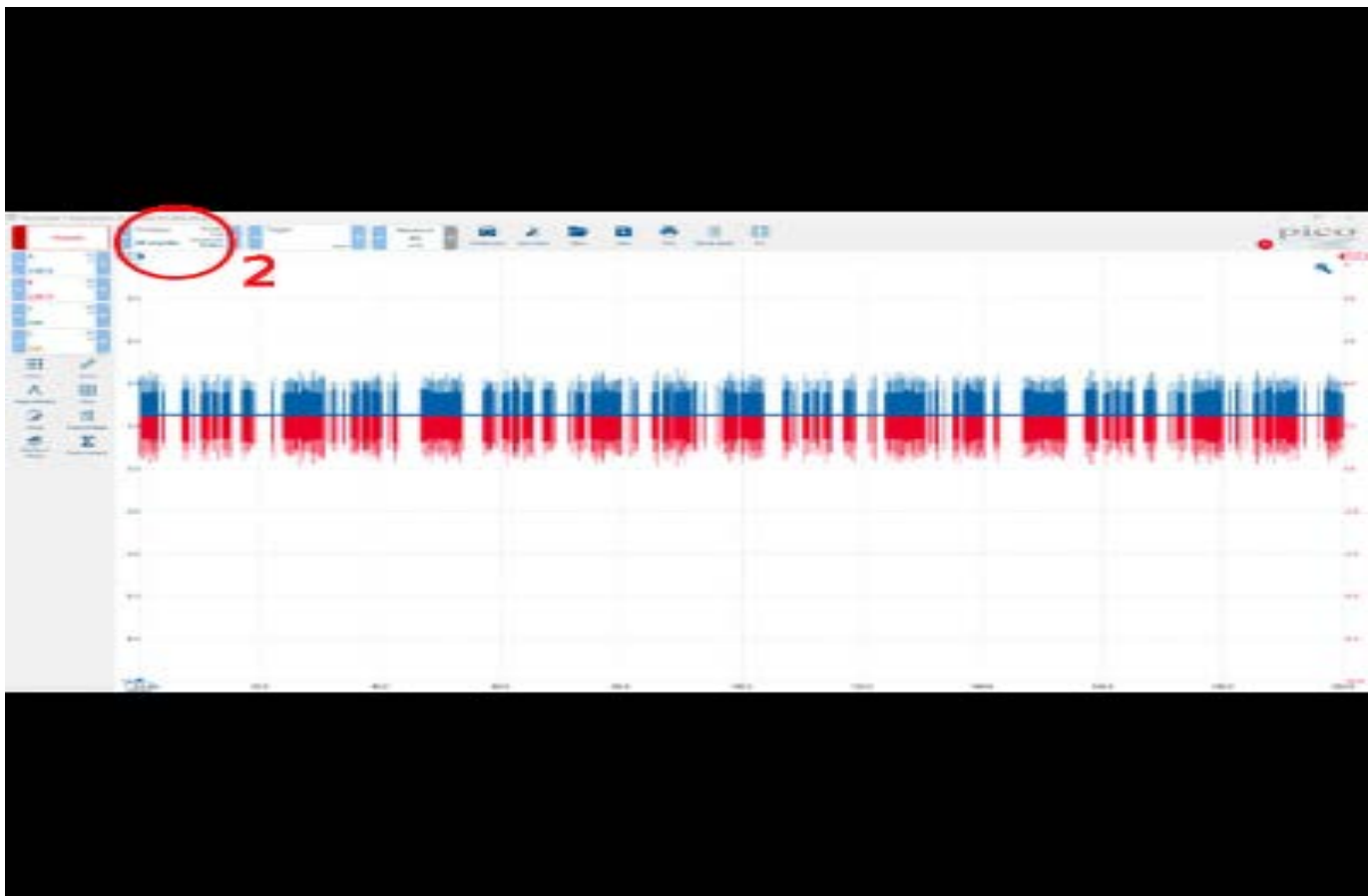
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- 2. Ensure your PicoScope is plugged into your computer and is selected:





3. Locate the channel settings (1) on the left side of the PicoScope screen, and ensure that channels A and B are set to +/- 10 V.
 - Clicking in the “A” channel box will bring up the voltage options for that channel. You can also adjust the voltage settings by using the “+” or “-“ buttons located on the left and right side of each channel.

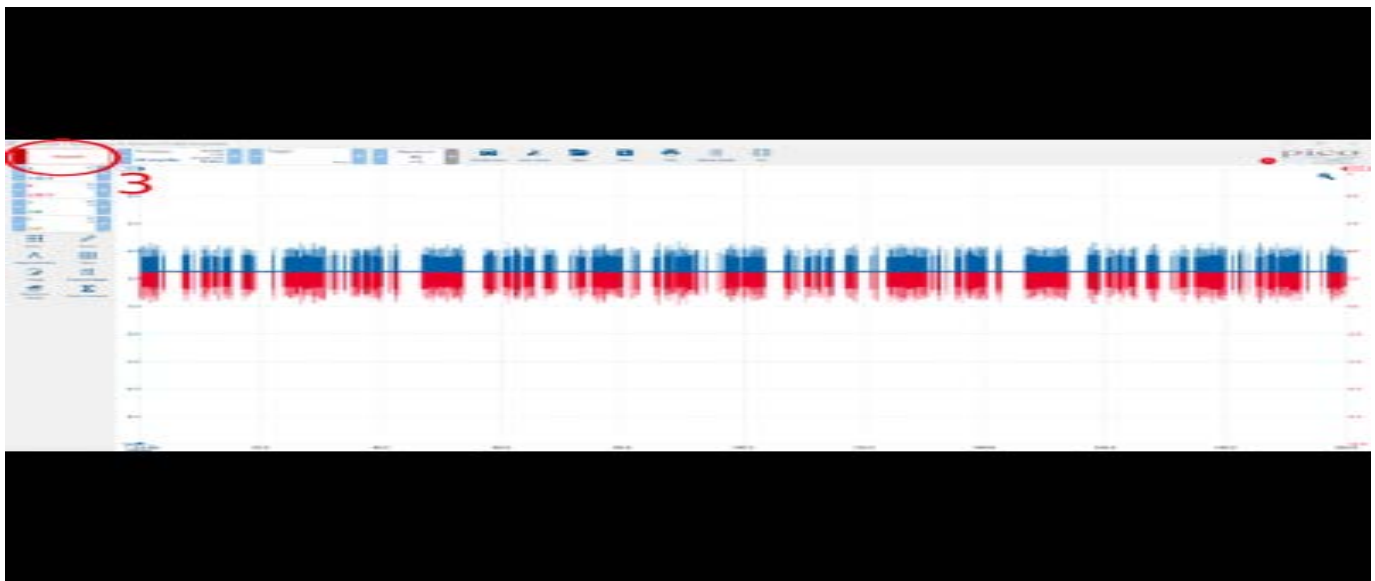


4. Locate the "Time base" settings (2) and ensure that it is set to 100 ms/div or less.



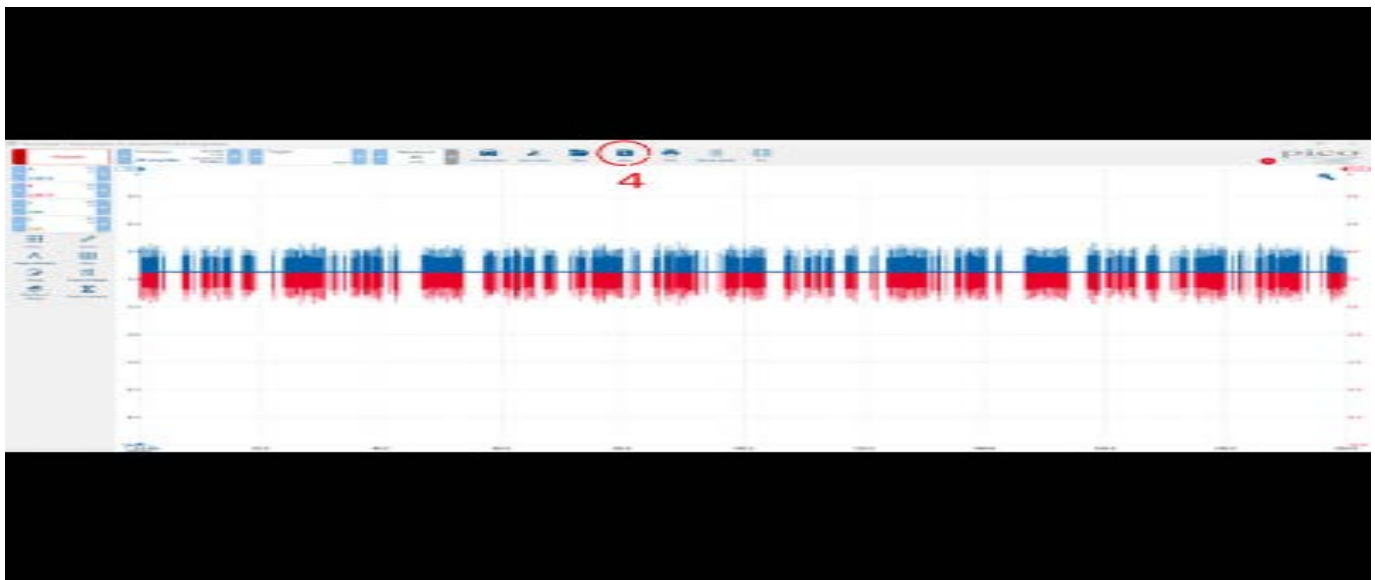
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- Under the “Time base” settings, locate the “sampling” button, and ensure that the Target Sampling Rate is 10 MS/s.
5. Hook up the PicoScope leads to the CAN bus you previously identified as the one experiencing the concern. (Reference Doc ID# 2414974 for proper electrical probing techniques and procedures that are supported by GM.)
 - Use the appropriate wiring diagram and ensure that one lead is attached to the CAN + circuit and the other to the CAN – circuit.
 - The black lead of each PicoScope Electrical lead will be attached to a *known good ground*.
 6. Operate the vehicle in the conditions under which the customer’s concern can be duplicated, while allowing the PicoScope software to run. Once the concern has been duplicated, stop the PicoScope recording and save the file.



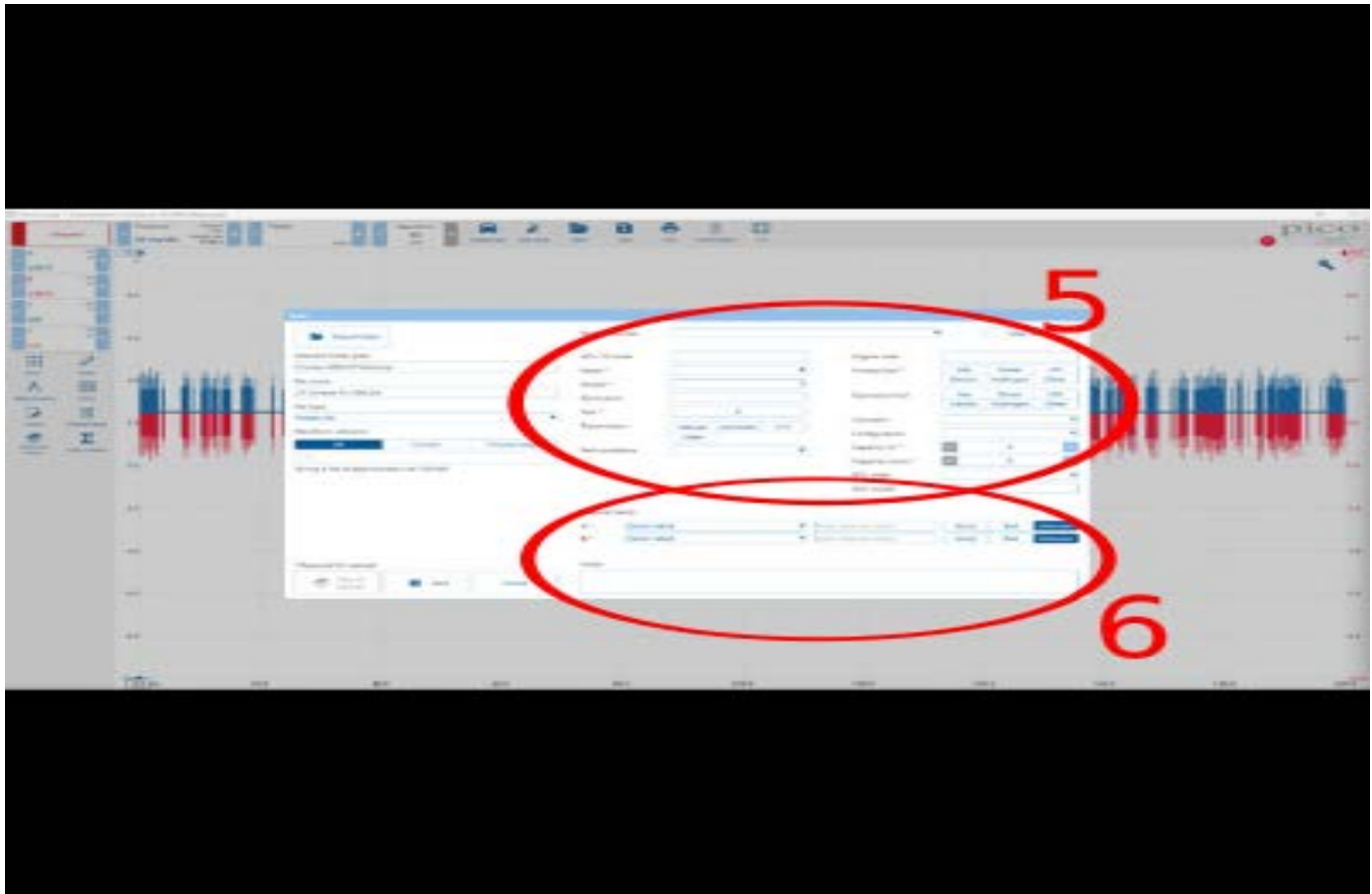
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- 6.A. Clicking the “Stopped” or “Running” (3) button in the top-left corner of the screen will either stop or start the recording. The spacebar can be used as a shortcut to stop or start the recording as well.
- 6.B. If the recording is STOPPED, and you start the recording again, all previously recorded waveforms will be deleted. It is crucial that you use the next steps to save your recording before starting a new recording.



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7. Select the “Save” button (4) in the upper-middle of the screen.
- 7.A. In the popup after clicking to save the file, locate the “Channel Labels” button and label the channels. Include circuit numbers, pins, and connector numbers.



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7.B. Input all vehicle specific information (5), channel labels and notes (6) about when the concern was present, and if the concern was present while the PicoScope was hooked up and running.

7.C. Click the “Save” button in the bottom-left of the popup window.

8. To upload the PicoScope file to your TAC case, locate your TAC case in the Dealer Case Management system, and once opened, select the “Add Attachment” tab in the Dealer Case Management tool.

8.A. Once you have clicked the “Add Attachment” button, locate the file on your computer, and select it. The file will now be loaded into the “Edit attachment” box. At this point, please add any comments that are needed, and then select the “Save” button at the bottom of the “Edit Attachment” box. This will save your file to the TAC case.

8.B. Bulletin # PIP4902R can be referenced for pictures or assistance with uploading the file to the TAC case.

TAC review and response times may vary based on volume of cases. Your patience is appreciated during their review.

Version	1
Modified	Released October 25, 2023

