TEXIO
Test and Measurement Solutions

INSTRUCTION MANUAL

OPTION SOFTWARE
DCS-9700 SERIES

B71-0432-30

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■**About this instruction manual**

In addition, the specifications of the product and the contents of this instruction manual are subject to change without notice for improvement. Please check to our website for the latest version.

Contents

1. APPLICATION OVERVIEW

1-1. OVERVIEW

This option is the one that extends the functionality of the DCS-9700 series. Features that are extended are as follows.

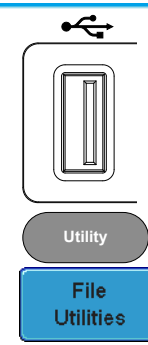
Function	NAME	Filename
DVM expansion	DVM app	DVM.gz
Horizontal expansion	HExpand app	HExpand.gz
Advanced Logic Trig	Advanced Logic app	AdvancedLogic.gz
CAN/LIN Bus Decoder	CAN LIN app	CAN_LinBus.gz
Data Logging	Data Log app	DataLog.gz
Bus Decoder	BusDecode app	BusDecord.gz
Firmware	Update	GDM2K_V*.**.upg

DCS-9700 is required version 1.18 or higher for this option. (BusDecorde is required ver 1.21 or higher.)

1-2. Software Installation

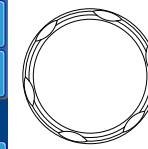
Operation

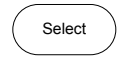
1. Extract the software provided is compressed, copy it to a folder for each USB Flash Disk.
2. Insert the USB Flash Disk for the desired option into the front panel USB A port.
3. Press the *Utility* key then the *File Utilities* soft-key.



4. Navigate to the desired file in the USB file path.

VARIABLE





5. When the desired installation file(****.gz) has been found, press the *Select* key to start the installation.

6. The installation will complete in a few seconds. When finished a pop-up message will appear asking you to restart the DCS-9700.
7. Restart the DCS-9700 after remove USB Flash Disk.

1-3. Uninstalling Optional Software

Background Optional software packages such as the Search function can be uninstalled from the system menu.

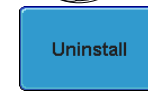
Operation

1. Press the *Test* key.

2. Press *APP.* from the bottom menu.

3. Use the Variable knob to select an option to uninstall.

4. Press *Uninstall* to uninstall the option.



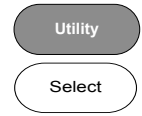
5. Restart the DCS-9700 according to the message.

1-4. Update Firmware

Steps

1. Please copy the update file to root of the USB Flash Disk. Please insert the USB Flash Disk to the USB connector on the front panel.

2. Select the *Utility* key → *File Utility*, and to display a list of files in USB Flash Disk. Select the update file, press twice the *Select* key.



3. Please wait a few minutes until completion displayed. Please to cycle the power on and remove the USB Flash Disk.
4. Wait a few minutes because it performs the initialization and update during the execution of the self-check.
5. Push *Default* key.

2. DVM function

2-1. OVERVIEW

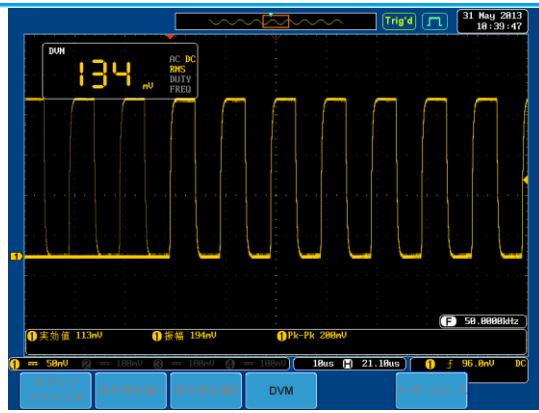
The DVM APP. allows you to measure the AC RMS, DC, DC RMS, Duty and Frequency of an input signal. This software is especially useful for those measurement applications that require both a DSO and a basic DVM to be used at the same time.

- 3 digit resolution for voltage measurements
- 5 digit resolution for frequency
- Input channel selection (CH1/CH2/CH3/CH4)

Note: This application is a basic application and lacks some of the functionality, accuracy and resolution of a true digital DVM.

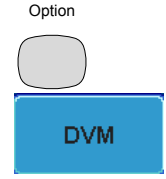
2-2. OPREATION

example

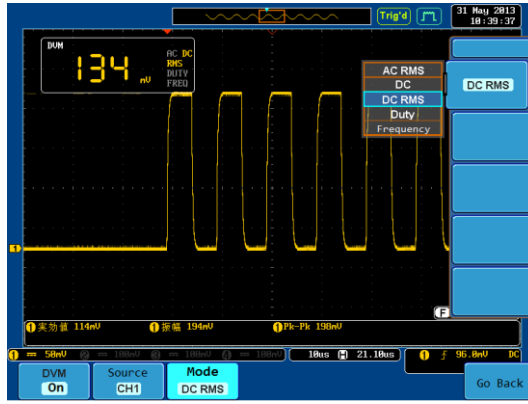


Steps

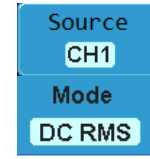
1. Enter the DVM menu. (Option key > DVM).



2. In the DVM menu, press the DVM soft-key to toggle the DVM function on.



3. Press the Source key to select the input source.(CH1,CH2,CH3,CH4)



4. Press Mode and choose the measurement mode. (AC RMS,DC,DC RMS,Duty, Frequency)
5. The measurement results will be shown in real-time in the top left-hand side of the display.
6. The DVM application will remain running even if other functions are performed, until it is turned off.

3. Horizontal Expansion function

3-1. OVERVIEW

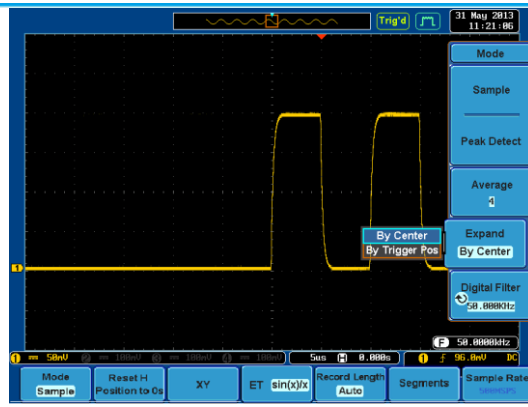
The Horizontal Expansion APP. adds the ability to change the center point of the horizontal expansion of DCS-9700 series.

Select reference point of the horizontal expansion from the following.

- The center of the screen (original)
- The trigger point

3-2. OPERATION

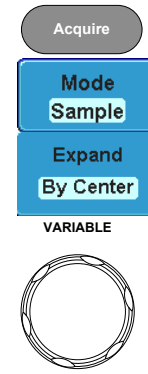
example



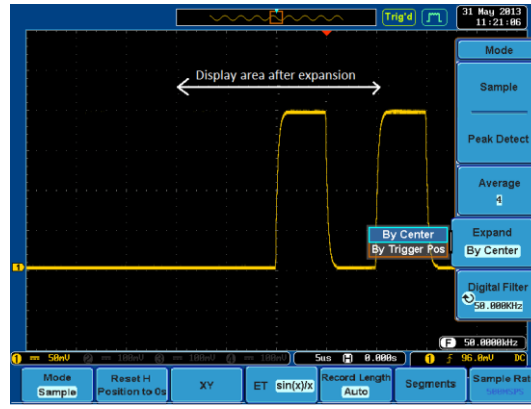
Steps

1. Press the *Acquire* key. To set the Acquisition mode, press *Mode* on the bottom menu.

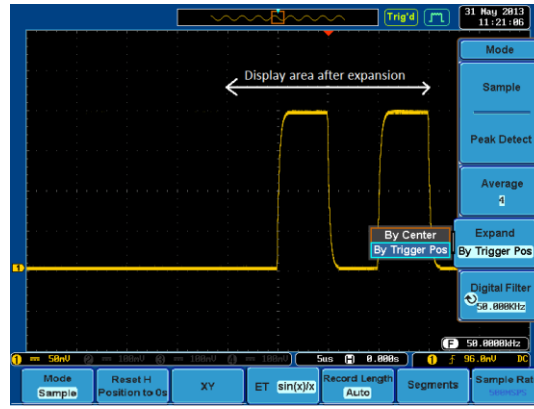
2. Press the Expand key and choose By Center or By Trigger Pos.



3. The Expand by Center will scale the waveform from the center of the display when the waveform is scaled using the TIME/DIV knob.



4. The Expand by Trigger position will scale the waveform from the trigger position when the waveform is scaled using the TIME/DIV knob.



4. Advanced Logic Trig function

4-1. OVERVIEW

The Advanced Logic app. adds the Logic type to Logic trigger of DCS-9700 series. DS2-16LA or DS2-08LA is required to trigger logic function.

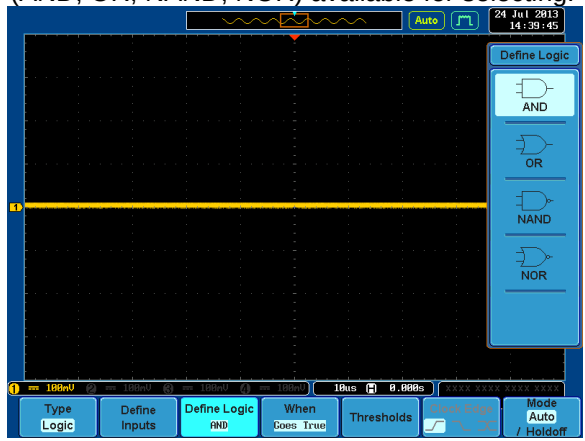
4-2. OPERATION

Steps

1. Press the Trigger *Menu* key on the front panel.

2. Press the *Type* button from the lower menu.

3. Select a define logic type by pressing the desired logic type on the side menu. There are 4 logic types (AND, OR, NAND, NOR) available for selecting.



5. CAN/LIN Bus Decoder function

5-1. OVERVIEW

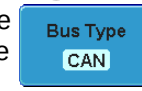
The CAN LinBus app. adds the bus decode and the bus trigger type to Logic trigger of DCS-9700 series. DS2-16LA or DS2-08LA is required to the function.

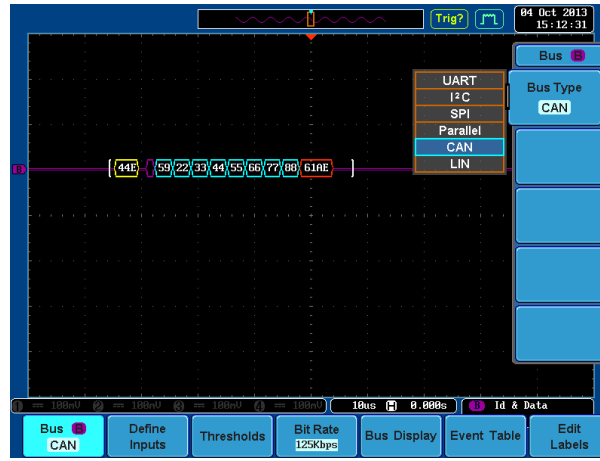
5-2. OPERATION

Steps

1. Press the B key on the front panel.

2. Select the *Bus Type* button from the side menu. You can select *CAN* or *LIN* as the bus decoder.





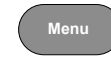
CAN Bus Decode Display Information		
Field		Description
frame		CAN frame is shown as a white left bracket.
Identifier		The Identifier field is shown as a yellow box.
DLC		The DLC field is shown as a purple box.
Data		The Data field is shown as a cyan box.
CRC		The CRC field is shown as an orange box.
Missing Ack		Missing Acknowledge is shown as a red exclamation symbol.
Bit stuffing error, Error frame, Overland		Bit stuffing error is shown as a red box. Error frame and Overland are shown as a purple box.

LIN Bus Decode Display Information		
Field		Description
frame		LIN frame is shown as a white left bracket.
Break , Sync		The Break and Sync fields are shown as a purple box.
Identifier , Parity		The Identifier and Parity fields are shown a yellow box.
Data		The Data field is shown as a cyan box.
Checksum , Wakeup		The Checksum and Wakeup fields are shown as a purple box.
Error type		Error type is shown as a red box.
Sync, Parity, Checksum		When a check sum error happens, the checksum field turns into an Error type field.

5-3. How to Trigger on the CAN Bus Decoder

Steps

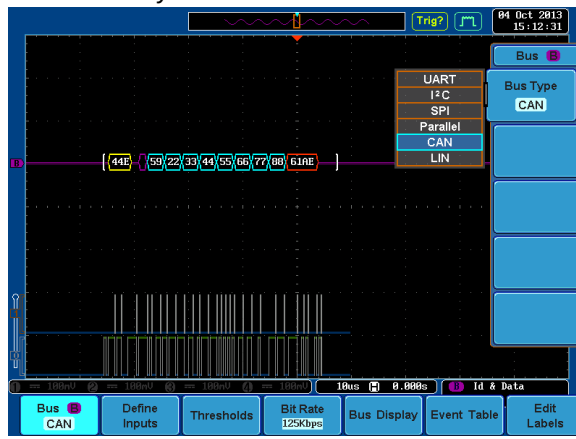
1. Press the Trigger Menu key on the front panel.



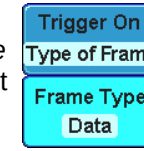
2. Select the *Bus Type* button from the side menu. You can select *CAN* as the bus decoder.

3. Press the Others button from the side menu and then select the Bus using the Variable knob and Select key.

4. Press the Trigger On button from the lower menu and then select the desired Trigger ON condition using the Variable knob and Select key.

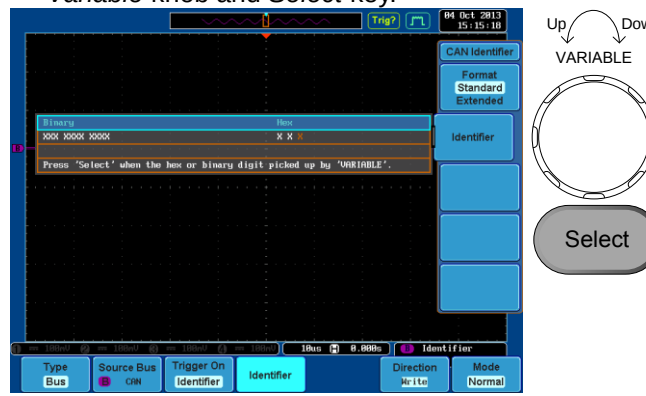


5. If the *Type of Frame* option is selected as the Trigger On condition, press the *Frame Type* button from the lower menu to select the desired frame type.

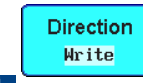


6. Select a frame type from the side menu.

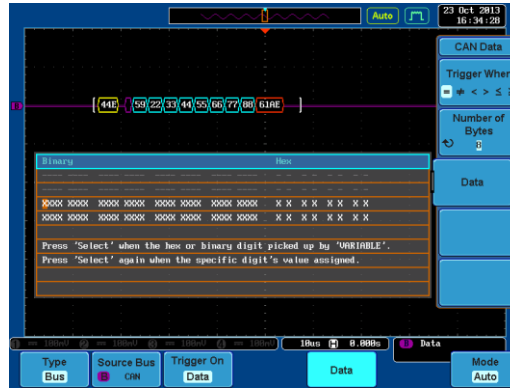
7. If the *Identifier* option is selected as the Trigger On condition, press the *Identifier* button from the lower menu.
   Select the Format from the side menu.
   Press the *Identifier* button from the side menu.
   Enter a binary or hex value with the *Variable* knob and *Select* key.

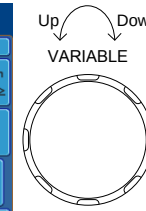


8. Press the *Direction* button from the lower menu and select the desired direction.



9. If *Data* option is selected as the Trigger On condition, press the *Data* button from the lower menu.
   Select the desired parameters from the side menu.





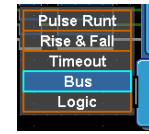
5-4. How to Trigger on the LIN Bus Decoder

Steps

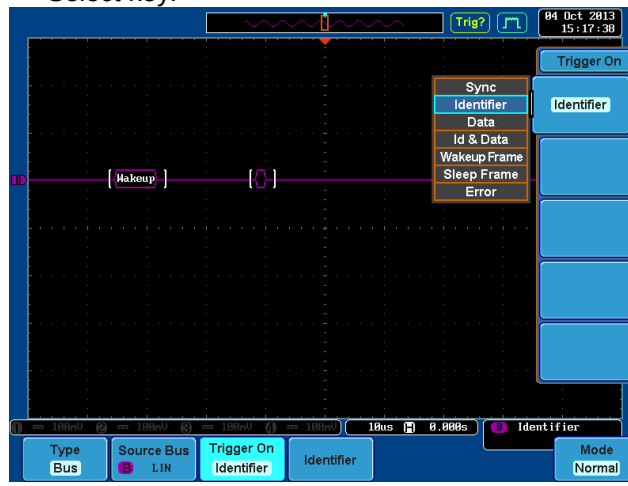
1. Press the Trigger Menu key on the front panel.

2. Select the *Bus Type* button from the side menu. You can select *LIN* as the bus decoder.

3. Press the Others button from the side menu and then select the Bus using the Variable knob and Select key.

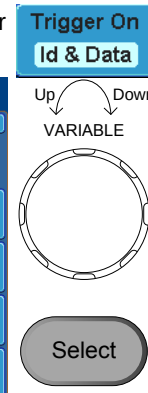


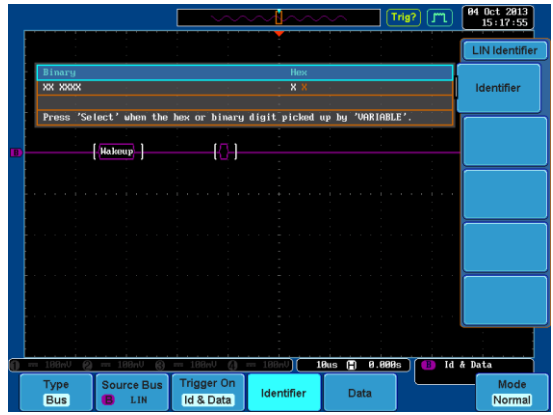
4. Press the Trigger On button from the lower menu and then select the desired Trigger ON condition using the Variable knob and Select key.

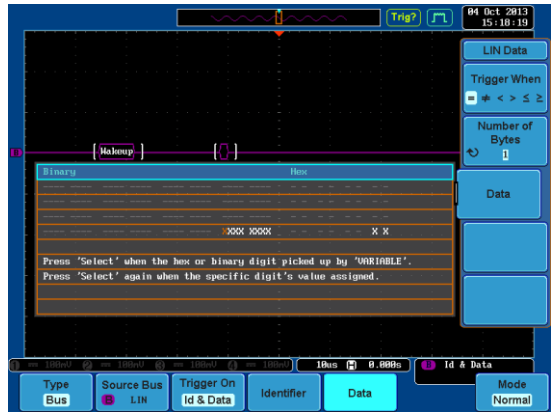


5. If select "Sync", "Wakeup" or "Sleep", the scope has triggered at each frame.
6. If Error is selected as the Trigger On condition, Select the Error Type

7. If ID ,DATA ,ID&DATA is selected as the Trigger On condition, Select the desired parameters.







6. Data Logging function

6-1. OVERVIEW

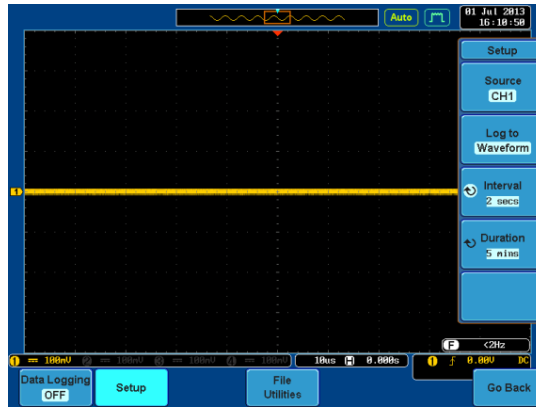
The Data Log app will add the ability to save at regular intervals the log data or the screen image to a USB flash drive or Network drive.

6-2. SETUP

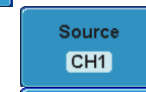
Steps

1. Press the *Test* key on the front panel.

2. Press the *Data Logging* button from the lower menu.
3. Press the *Setup* button from the lower menu.



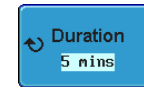
4. Press the *Source* button from the side menu to select which channel to record.



5. Press the *Log to* button from the side menu to select where to log to (waveform or image).

6. Press the *Interval* button from the side menu. Use the *Variable* knob to select the time interval. The minimum time interval is 2 seconds if “Log to Waveform” is selected, and 5 seconds if “Log to Image” is selected)

7. Press the *Duration* button from the side menu. Use the *Variable* knob to select the logging duration. Duration is ranged from 5 minutes to 100 hours.



Steps

1. Select the location to save recorded data. If the DS2-LAN (Ethernet & SVGA output interface) is installed, the recorded data can be shared on the network.

2. Press the *Data Logging* button from the lower menu to start data logging. When *Data Logging* is *ON*, the scope will keep recording according to the present trigger conditions and the data logging application settings. To stop recording, press *Data Logging* to toggle data logging to *OFF* when recording is in process.

3. The recorded data will be saved in a newly created folder named *LOGXXXX* as shown in the image below.

7. Bus Decode function

7-1. OVERVIEW

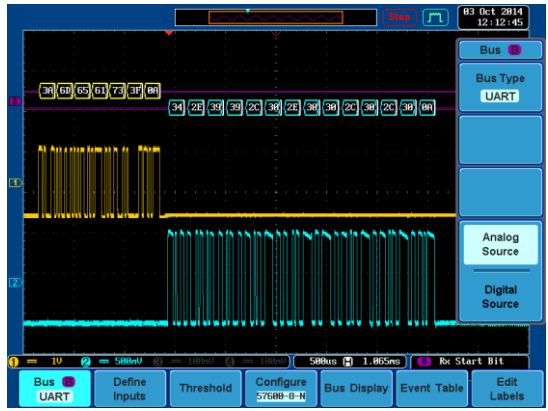
Bus decode function to extend the trigger function and the decode function of the analog input channels for the serial bus.
It is equivalent to the function to be expanded in the CAN/LIN Decode functions and Option logic analyzer (DS2-08LA/16LA).
Option of DS2-08LA/16LA does not require in this feature.

7-2. SETUP

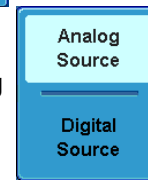
Steps

1. Press the B key on the front panel.

2. Select the *Bus Type* button from the side menu.



3. Select the Source Input from the side menu. Analog Source:CH1 – 4
4. Digital Source is enabled when installing the logic analyzer option.
5. Feature to be added is as follows.
   - Bus Decode
   - Bus trigger



Support will be the only serial bus. For more information on settings, please refer to the description of the CAN/LIN Bus Decoder and logic analyzer option.
Please set individually in the menu of the input definition analog channels.
Logic analyzer option (DS2-08LA/16LA) is not required if you do not use a Digital Source.

8. Sharing folder on the Network

8-1. OVERVIEW

The remote disk will allow you to access and save files to a network disk. DS2-LAN is required to the function.

8-2. OPERATION

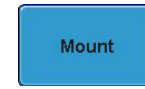
Steps

1. Press the *Test* key on the front panel.

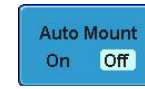
2. Press the *Mount Remote Disk* button from the lower menu.

3. Input the *IP Address* and relevant information. Please specify a shared folder at Windows.

4. Press the *Mount* button from the side menu.



5. To automatically connect to the network hard disk after booting the DCS-9700. You need to toggle the *Auto Mount* button to *ON* from the side menu.



6. A popup message, “Complete”, will appear to indicate that the setting is complete.

7. Press the *Utility* key on the front panel. A “Z” icon will appear on the screen to indicate a network hard disk.
8. Press the *File Utility* button and select the Z drive as the location to save recorded data.

TEXIO TECHNOLOGY CORPORATION
7F Towa Fudosan Shin Yokohama Bldg., 2-18-13, Shin Yokohama, Kohoku-ku,
Yokohama, Kanagawa, 222-0033, Japan.
http://www.texio.co.jp/