Leaflet

ScopeCorder SDK (Software Development Kit)

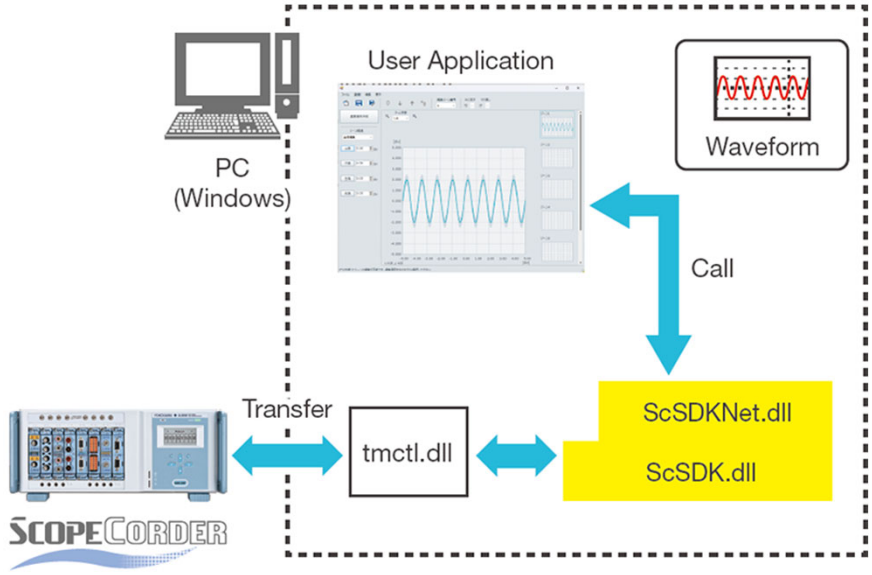
Industry: EVs & Transportation, Motors & Drives, Appliances, Industrial & Consumer Electronics

ScopeCorder SDK

The SDK includes a DLL-based API that allows you to fully control the SL2000 from your own software environment. Easily data acquisition, trigger events, and data transfers from a PC.

Key supported operations

- **Free Run Mode: Continuous data acquisition from start to stop**
- **Trigger Mode: Event-based waveform capture**
- **Flash Access: Transfer waveforms stored in flash memory**
- **File Handling: File operation and file transfer**



Applicable Model

- **DL950 / SL2000 (Applicable firmware version is 2.01 or later.)**

Other development Tools and Drivers

- WDF File Access Library: Read the waveform data files (WDF) from instrument
- MATLAB Toolbox: Directly import WDF files into MATLAB
- Binary Data File Converter: Convert WDF data files into WVF/ASCII formats
- DL-Term: Command line tool for communication and scripting
- TMCTL Library: Simplifies control over USB, Ethernet, or serial interfaces
- LabVIEW and USB Drivers: Integrate the SL2000 into LabVIEW-based systems
- Sample Programs: Get started quickly with examples in C, Python, and other languages

Whether you're building a automated test system, developing custom visualization tools, or integrating the SL2000 into a larger bench setup, these resources help you get the most out of your measurement hardware.

LF_ScopeCorder_SDK-01EN
Rev. 1 November 19, 2025

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Data Acquisition Function

As shown in the page 1 figure, the data acquisition function provides functions for obtaining waveform data being acquired by the instrument and setting measurement conditions to the application. (Free run measurement and trigger measurement)
The API's data acquisition function supports two acquisition modes: free run and trigger.

(1) Free run mode
Free run mode is used to acquire data from the start to the end of waveform acquisition.
Waveform acquisition specifications in free run mode
- Maximum data rate 320 MB/s (10 MS/s×16ch) for 10Gbit Ethernet connection
- Maximum data rate 6.4 MB/s (200 kS/s×16ch) for 1Gbit Ethernet/USB connection
- Maximum waveform acquisition time 10 days (maximum operation time guaranteed for this API)*

* If data is sent from a DL950/SL2000 at the above data rate in measurement using multi-unit synchronization connection, the possibility of data transmission buffer overrun occurring will increase depending on the connection environment, the PC performance, and so on. As such, it is recommended that measurements be made with the total data rate of the multiple connected units set within the above range.

(2) Trigger mode
Trigger mode is used to acquire waveform using triggers. There are two trigger modes available with the API: (1) synchronous mode in which the DL950/SL2000 acquires waveforms synchronously with the PC and (2) asynchronous mode in which the DL950/SL2000 acquires waveforms asynchronously with the PC. Note that the API does not support the following features.

- Waveform acquisition in roll mode (the DL950/SL2000 itself supports waveform acquisition in roll mode, but the API does not support waveform acquisition while the DL950 is acquiring waveforms in roll mode)
- DL950/SL2000 trigger mode set to Single N
- Waveform acquisition using dual capture
- Real-time recording (SSD and flash acquisition)
- Recorder mode

Trigger-based waveform acquisition specifications Maximum waveform acquisition time 10 days (maximum operation time guaranteed for this API)*
When high-speed transmission mode using 10GbpsEthernet is enabled, the maximum record length that can be specified is as shown below due to the memory join limitation. For details on memory join, see the appendix in the DL950 ScopeCorder/SL2000 High-Speed Data Acquisition Unit User's Manual (IM DL950-03EN).
Standard model: 250 M
/M1 Model: 1 G
/M2 Model: 2 G

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Flash acquisition data access library

The Flash Acquisition Data Access Library provides applications with a function for extracting flash acquisition waveform data stored in a DL950/SL2000 directly to a PC without loading the data into the instrument.

* Note that the acquisition memory is used as a temporary buffer when flash acquisition waveform data is extracted through the use of this API. Thus, data and history information in the acquisition memory that have not been saved to a storage device will be cleared. Waveform data stored in the flash acquisition area is not affected.
* This feature is available only when the /ST2 option is installed.

File operation and transfer feature

The file operation and transfer feature provides applications with features related to the acquisition, transmission, and deletion of DL950/SL2000 measurement data and settings

Initial screen when connecting VXI11 to two DL950 units.
It uses /C50 option between two DL950 units.