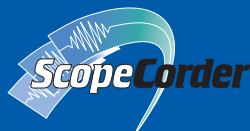
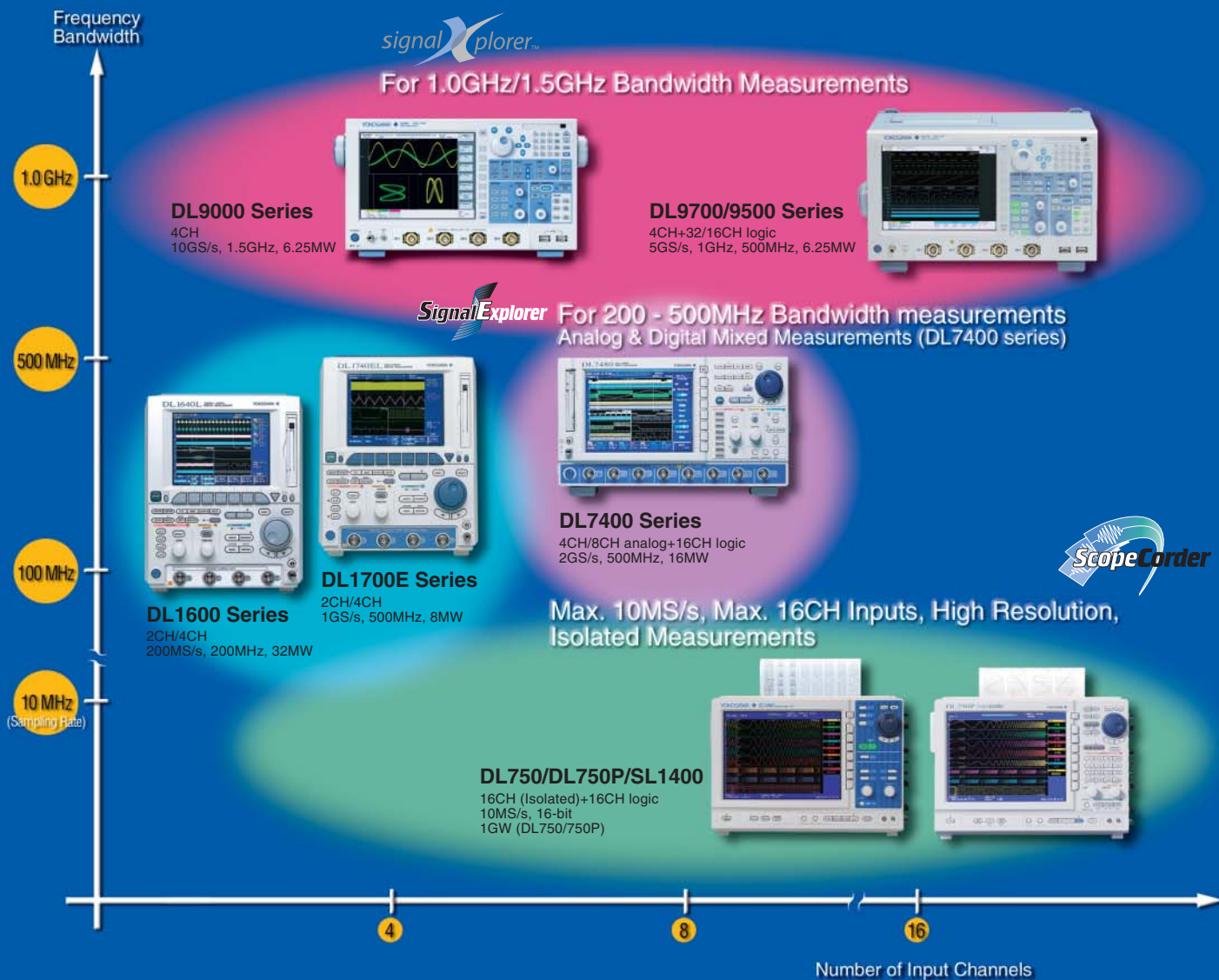


Digital Oscilloscopes and ScopeCorders



Yokogawa's DL series of instruments consists of digital oscilloscopes and hybrid ScopeCorders. The DL9000 series digital oscilloscopes have high-speed sampling and a wide range of bandwidths that can be utilized for design and development of electronic devices and embedded systems. The DL9700/9500 series Mixed Signal Oscilloscopes have 4 Analog channels and up to 32 logic channels. The DL1600 series oscilloscopes support 3-mode power supplies, and the weight is just 3.9kg. The ScopeCorders have the capabilities of both a powerful digital sampling oscilloscope and a multi-channel data recorder, and are a perfect fit for industrial, manufacturing, and maintenance environments. The DL series offers a wide range of capabilities designed to meet your current and future needs.

DL/SL Series Lineup



Select the "perfect" DL for your application

For full 1 GHz/1.5 GHz bandwidth measurements

▼ High performance and compact Mixed Signal Oscilloscope



DL9700/DL9500 Series

- Max. 5 GS/s
- 1 GHz (DL9710L, DL9510L) / 500 MHz (DL9705L, DL9505L) analog bandwidth
- Max. Record length 6.25 MW/CH
- 4 Analog channels + 32/16 Logic inputs
- Max. 2.5 M waveforms/sec/ch fast acquisition rate
- I²C, SPI, CAN and LIN bus analysis functions (optional)
- Power supply analysis function (optional)
- 8.4-inch color TFT LCD (XGA)
- Weight approximately 8 kg

Application Examples :Design and development of embedded devices
:Analog & Digital mixed-signal measurement
:Debugging of CPU control circuit

▼ Gigahertz-band digital oscilloscopes offer high performance and portability at an affordable price.



DL9000 Series

- Max. 10 GS/s (DL9240/DL9240L)
- 500 MHz (DL9040, DL9040L) / 1 GHz (DL9140, DL9140L) / 1.5 GHz (DL9240, DL9240L) analog bandwidth
- Max. Record length 2.5 MW/CH (DL9040, DL9140, DL9240) 6.25 MW/CH (DL9040L, DL9140L, DL9240L)
- Max. 2.5 M waveforms/sec/ch fast acquisition rate
- Compact and light weight, 18 cm (7.1") depth, 6.5 kg (14.5 lbs)
- I²C, SPI, CAN and LIN bus analysis functions (optional)
- 8.4-inch color TFT LCD (XGA)

Application Examples :Design and development of AV equipment, digital home electronics, mobile phones and other embedded devices

For 500 MHz bandwidth analog and digital mixed-signal measurements

▼ The DL7400 series is designed to make complex analog & digital measurements easily.



DL7400 Series

- Max. 2 GS/s
- 500 MHz analog bandwidth
- DL7440 4 CH analog inputs
- DL7480 8 CH analog inputs
- Max. 16 MW memory
- 8.4-inch color TFT LCD (VGA)
- 16-bit logic inputs
- Power analysis function (optional)
- I²C, CAN, SPI and FlexRay bus analysis functions (optional)

Application Examples :ASIC system design
:Software debugging for equipment controlled by a microcomputer.

For 200 - 500 MHz bandwidth measurements

▼ These compact, lightweight models offer high-speed sampling and long memory.



DL1700E Series

- Max. 1 GS/s
- 350 MHz, 500 MHz analog bandwidth
- DL1740E/EL 4CH analog inputs
- DL1720E 2CH analog inputs
- Max. 8MW memory
- 6.4-inch color TFT LCD (VGA)
- PC card interface or FDD (select one)
- Supports USB mass storage
- I²C and SPI bus analysis function (optional)

Application Examples :Production line for DVD manufacturing
:Evaluation of embedded systems controlled by I²C bus

▼ Our best-selling models support 3-mode power supplies, and weight just 3.9 kg.



*DL1640+Battery Box

DL1600 Series

- Max. 200MS/s
- 200MHz analog bandwidth
- DL1640/DL1640L 4 CH analog inputs
- DL1620 2 CH analog inputs
- Max. 32MW memory
- 6.4-inch color TFT LCD (VGA)
- Real-time digital filtering and high-resolution mode
- I²C, SPI and CAN bus analysis functions (optional)
- 3-mode power supplies (AC, DC12V, battery)
- Compact and lightweight, just 3.9 kg (base model)

Application Examples :Measurement of energy consumption of RFIC in mobile phone.
:CAN physical layer analysis for in-vehicle testing

Up to 10 MS/s sampling rate, max 16 CH inputs for various kinds of signals such as voltage, temperature, strain, frequency, etc.

▼ 11 different plug-in modules can be combined to meet a variety of measurements needs.



DL750/DL750P

- Max. 10 MS/s (using 701250 module)
- Max. 16-bit A/D resolution (using 701251, 701260 module)
- Max. analog 16-ch + logic 16-bit inputs
- Max. 1 GW memory
- 10.4-inch color TFT LCD (SVGA)
- 40 GB internal HDD (optional)
- Dual capture function
- 200 mm printing width high resolution A4 thermal printer (DL750P)
- DC12 V Power supplies available (DL750)

DL750/DL750P Plug-In Modules

Model No.	Description
701250	High-speed 10 MS/s 12-bit isolation module (2 CH)
701251	High-speed 1 MS/s 16-bit isolation module (2 CH)
701255	High-speed 10 MS/s 12-bit non-isolation module (2 CH)
701260	High-voltage 100 kS/s 16-bit isolation module (2 CH, with RMS)
701261	Universal Module (2 CH)
701262	Universal Module (with AAF, 2 CH)
701265	Temperature/high-Precision voltage module (2 CH)
701270	Strain module (NDIS, 2 CH)
701271	Strain module (DSUB, Shunt-CAL, 2 CH)
701275	Acceleration/Voltage module (with AAF, 2 CH)
701280	Frequency module (2 CH)

Application Examples :Automobiles (engine combustion pressure, brakes, transmission control signals)
:Motors, Inverters, Press machine, Hydraulic equipment, Printer...

▼ Easy operation and a perfect fit for manufacturing and maintenance departments



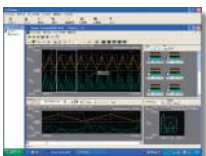
SL1400

- Max. 10 MS/s (using 701250 module)
- Max. 16-bit A/D resolution (using 701251, 701260 module)
- Max. analog 16-ch + logic 16-bit inputs
- Max. 50 MW memory
- Max. 16 Analog channels + 16 Logic input
- 10.4-inch color TFT LCD (SVGA)
- 40 GB internal HDD (optional)
- Dual capture function
- High resolution A4 thermal printer

Application Examples :Power supply quality measurement
:Steel plant maintenance, Power plant maintenance

Accessories

Xviewer (701992)



Xviewer is a PC software application designed to work with the DL series digital oscilloscopes and the DL750 series ScopeCorders. Xviewer allows you to display DL-acquired waveform data (using the "Viewer" function), perform file transfers, and control DL series instruments remotely.

You can download a trial version of Xviewer from YOKOGAWA's web site at:
<http://www.yokogawa.co.jp/tm/Bu/701992/>

USB Compliance Test Solution



A DL9240 or DL9240L together with the USB test fixture, test software and probes, allow you to test a USB device, host or hub for compliance to USB-IF specifications. The test software shows connection methods and test procedures in a wizard form for each test item. It shows connections, settings and operations necessary for carrying out each test enabling even first-time users to perform test easily. You can output waveform data from a test result window to analyze failed signals using the Xviewer waveform analysis software.

DL series • Selection Guide*1

Item	Model	DL9700L/DL9500L	DL9040/9140/9240	DL7400 series	DL1700E series	DL1600 series	DL750/DL750P	SL1400
Features		Analog 4 ch+Logic 32/16 bits input Max. 5 GS/s Serial bus analysis functions Power supply analysis functions "Virtual DA" functions Probe power connectors Supports USB storage USB mouse/keyboard	Fast screen update & all points display Compact & lightweight, 4 ch Max. 10 GS/s I ² C, SPI, CAN and LIN bus analysis functions Probe power connectors Supports USB storage USB mouse/keyboard Power supply analysis functions	Fast screen update & all points display High speed 8 ch + 16 bits logic input Max. 2 GS/s Web server function Serial bus analysis functions Power analysis functions USB mouse/keyboard Probe power connectors Supports USB storage FlexRay signal analyzer	Fast screen update & all points display Compact & lightweight, 4 ch Max. 1 GS/s I ² C, SPI bus analysis functions Probe power connectors Supports USB storage Web server functions USB mouse/keyboard	Fast screen update & all points display Compact 4 ch, 200 MS/s Max. 32 MW memory (4 ch) Web server functions CAN, I ² C and SPI bus analysis functions USB mouse/keyboard Probe power connectors Supports USB storage	Compact, 16CH isolated inputs GigaZoomEngine /DualCapture Eleven different plug-in input modules Max. 1GW memory 200mm printing width high resolution A4 thermal printer (DL750P) Web server functions USB mouse/keyboard Probe power connectors	Compact, 16 ch isolated inputs (8 module slots) Eleven kinds of plug-in input modules Web server functions A4 (210 mm) big printer Probe power connectors
Max. Sampling Rate		5 GS/s	10 GS/s ⁽²⁾	2 GS/s	1 GS/s	200 MS/s	10 MS/s ⁽⁴⁾	10 MS/s ⁽⁴⁾
Bandwidth		1.0 GHz ⁽²⁾	1.5 GHz ⁽²⁾	500 MHz	500 MHz ⁽²⁾	200 MHz	3 MHz ⁽⁴⁾	3 MHz ⁽⁴⁾
Number of analog input channels		4	4	DL7440/7480: 4 ch / 8 ch	DL1720E/1735E, 40E, 40EL: 2 ch/4 ch	DL1620/1640/1640L: 2 ch/4 ch/4 ch	Plug-in module: 16 ch (isolated)	Plug-in module: 16 ch (isolation)
Logic Input		DL9705L, DL9710L: St'd:32 (8 bits × 4) DL9505L, DL9510L: St'd:16 (8 bits × 2)	-	St'd: 16-bit (8 bits × 2)	-	-	St'd: 16 (8 bits × 2)	St'd: 16 (8 bits × 2)
Max. vertical sensitivity (1:1)		2 mV/div	2 mV/div	2 mV/div	2 mV/div	2 mV/div	100 μV/div ⁽⁴⁾	1 mV range
Vertical axis resolution		8 bit	8 bit	8 bit	8 bit	8 bit	Max. 16 bits ⁽⁴⁾	Max. 16 bits ⁽⁴⁾
Max. sweep sensitivity		500 ps/div	500 ps/div	1 ns/div	1 ns/div	2 ns/div	500 ns/div ⁽⁴⁾	100 μs Setting
Max. record length	St'd	6.25 MW	DL9040, DL9140, DL9240: 2.5 MW DL9040L, DL9140L, DL9240L: 6.25 MW	701450/70: 4 MW 701460/80: 16 MW	DL1740EL: 8 MW DL1740E: 2 MW DL1735E: 2 MW DL1720E: 1 MW	DL1620/DL1640: 8 MW DL1640L: 32 MW	50 MW max/ 2.5 MW (16 ch)	50 MW max/ 2.5 MW (16 ch)
Option		-	-	-	-	-	1 GW max/50 MW (16 ch)	-
Internal Media drive	St'd	PC card (2)	PC card	PC card	-	-	-	-
selectable		-	-	FDD, Zip [®]	FDD, PC card	PC card, FDD, Zip [®]	PC card, FDD, Zip [™] (DL750 only)	PC card
Internal HDD	Optional	40 GB (FAT32)	40 GB (FAT32)	-	-	-	40 GB (FAT32)	40 GB (FAT32)
Interface	St'd	USB	USB	USB/GP-IB	USB/GP-IB	RS232	USB/GP-IB/RS232/SCSI	USB/GP-IB/RS232/SCSI
Optional		Ethernet	Ethernet	Ethernet/SCSI	Ethernet	USB/Ethernet/GP-IB	Ethernet	Ethernet
Internal printer	St'd / Optional	Optional: 112 mm width	Optional: 112 mm width	Optional: 112 mm width	Optional: 112 mm width	Optional: 112 mm width	St'd 112mm width (DL750) St'd 210mm width (DL750P)	St'd 210 mm width
Others	Optional	I ² C bus analysis SPI bus analysis CAN & LIN bus analysis Probe power connectors Power supply analysis functions User define math functions	I ² C bus analysis SPI bus analysis CAN & LIN bus analysis Probe power connectors	I ² C bus analysis CAN bus analysis SPI bus analysis User-defined math functions Power analysis Four additional probe power (total: 8, DL7480 only) ⁽³⁾ FlexRay bus analysis	I ² C bus analysis SPI bus analysis 2/4 output probe power connectors	I ² C bus analysis CAN bus analysis SPI bus analysis User-defined math functions 4 Probe power connectors DC12V drive model available (DL750)	Eleven kinds of plug-in modules 6 DSP channel User-defined math functions 2/4 Output probe power connectors 4 Probe power connectors DC12V drive model available (DL750)	Eleven kinds of plug-in modules 4 Probe power connectors
Display (TFT LCD)		8.4-inch color, XGA	8.4-inch color, XGA	8.4-inch color, VGA	6.4-inch color, VGA	6.4-inch color, VGA	10.4-inch color, SVGA	10.4-inch color, SVGA
External Dimensions W × H × D (mm)		350 × 200 × 285	350 × 200 × 178	373 × 210.5 × 355.3	220 × 266 × 264	220 × 266 × 224	355 × 250 × 180 (DL750) 355 × 250 × 225 (DL750P)	355 × 250 × 225
Approx. Weight (kg)		Approx. 7.7	Approx. 6.5	Approx. 10	Approx. 5.5	Approx. 3.9	6.6 (DL750 ⁽⁵⁾), 7.9 (DL750P ⁽⁵⁾)	Approx. 8.0 ⁽⁵⁾

*1: See each product catalog for more detailed specifications
*2: Depends on model

*3: The DL7400 series comes standard with four probe power connectors.
*4: Depends on input module

*5: Plug-in modules are not included

