DS-8814
DC – 100MHz, 4CH, 400MS/s
(10GS/s at Equivalent Sampling)

DS-8812
DC – 100MHz, 2CH, 500MS/s
(25GS/s at Equivalent Sampling)

Rear panel

Versatile interface for versatile data processing

DS-8814	DS-8812

Built-in printer with roll print function

Carrying Handle

PCMCIA (Type II) card slot

Printer Port (Centronics)

RS-232C Interface

RS-232C Interface

GP-IB Interface
Option Cable : DS-539

Option GP-IB Card with cable : DS-534

Full remote control available for RS-232C and GP-IB

■ Convenient original functions

AUTO SETUP for example, Undo function is available when you need to return previous setting.

※ GP-IB interface : DS-8812/DS-534 GP-IB card option is required
DS-8814/DS-539 GP-IB cable option is required

all in one

Built-in Printer   3.5inch Floppy Disk Drive   PCMCIA Card Slot

■ Built-in printer

Built-in printer is provided so you can output measured result anywhere by using COPY key.

■ Help menu

Explains the various menu functions. This menu is useful if user needs to know what a particular function does or is a beginner. Four languages (English, Japanese, Traditional Chinese, Simplified Chinese) are available.
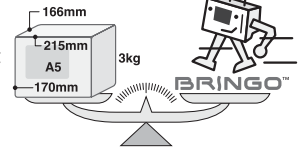

English   Japanese   Traditional Chinese   Simplified Chinese

■ Portability

With a total weight of only about 3kg (including Built-in printer), this compact scope is easily into narrow spaces on crowded workbenches.

166mm
215mm
A5
170mm
3kg

■ Reliable basic performance

Even ultra lightweight, compact design, DS-8814/DS-8812 has reliable basic performance. 4CH model DS-8814 operates at 400MS/s sampling rate with 100MHz frequency bandwidth. 2CH model DS-8812 has 500MS/s sampling rate. Each model has long 100k-word/CH acquisition memory.
Vertical accuracy is within 2% and horizontal accuracy is 50ppm (0.005%).

■ 10GS/s equivalent sampling (DS-8812, 25GS/s)

Using the equivalent sampling method, the time resolution is increased up to 100ps (equivalent to 10GS/s, 40ps/25GS/s : DS-8812). Waveforms before triggering can be observed.
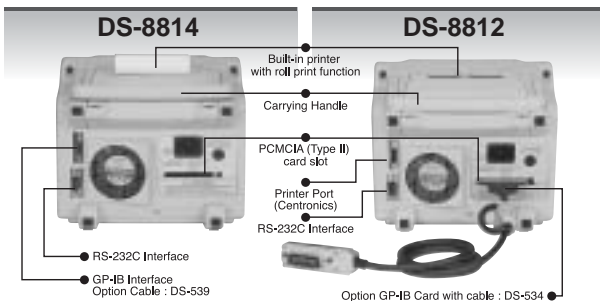
■ Hardware 5-digit frequency counter

Input signal frequency can be shown in five digits, making aliasing checking easier.

Specifications

■ **LCD**	
● **Type**	5.8-inch LCD display (backlit EL), Blue color
● **Size**	320 x 240dots (approx. 115 x 86 mm)
● **Contrast**	Auto adjust (manual setting available)

■ Vertical deflection system (Y axis)
● **Common to CH1/CH2/CH3/CH4 for DS-8814**
● **Common to CH1/CH2 for DS-8812**

● **Sensitivity**	2mV/div - 10V/div(1-2-5 steps), accuracy 2%

● **Frequency**
● **Bandwidth**

DS-8814	5mV/div – 10V/div	DC-100MHz –3dB
	2mV/div	DC-100MHz –3.5dB
DS-8812	2mV/div – 10V/div	DC-100MHz –3dB

※Lower limitation for AC coupling is 10Hz

● **Rise time**	approx 3.5ns
● **Input coupling**	AC, DC, GND
● **Input RC**	1MΩ ±1.5%//20pF±2pF
● **Max. input voltage**	±400V (DC+AC peak)
● **Bandwidth limit**	DS-8814 : DC – 10MHz –3dB
	(CH1/CH2/CH3/CH4 individual setting available)
	DS-8812 : DC – 10MHz –3dB
	(CH1/CH2 individual setting available)
● **Offset**	2mV/div – 50mV/div : ±1V
	100mV/div – 500mV/div : ±10V
	1Vdiv – 10V/div : ±100V
● **Probe attenuation**	1:1, 10:1, 100:1, 1000:1
	(1:1, 10:1, 100:1 are automatically recognized)

■ Triggering

- **Trigger mode** — Edge, Event, TV
- **Signal source**

DS-8814	CH1, CH2, CH3, CH4, LINE
DS-8812	CH1, CH2, EXT, LINE

- **Coupling** — DC, AC, HF-Rej, LF-Rej
- **Polarity** — + (Positive), - (Negative)
- **Trigger level range** — ±5div
- **Trigger delay**

Memory Length	Sweep time	setting range
Short	5ns/div – 1ms/div	-5div - +10ms
	2ms/div – 50s/div	-5div - +500s
Long	5ns/div – 20ms/div	-5div - +200ms
	50ms/div – 50s/div	-5div - +500s

- **Hold off** — 200ns – 2s, OFF
(DS-8812:only available when select Edge mode)
- **EXT trigger input (DS-8812 only)**
  - **Sensitivity** — 100mV/div (Fixed)
  - **Input coupling** — DC
  - **Input RC** — 1MΩ ± 1.5%//20pF ± 2.5pF
  - **Max. Input voltage** — ± 400V (DC+AC peak)
- **Minimum Trigger level**

Frequency bandwidth	DS-8814:CH1,CH2,CH3,CH4	–
	DS-8812:CH1,CH2	EXT
DC – 10MHz	0.5div	50mVp-p
10MHz – 100MHz	1.5div	150mVp-p

- **TV Trigger**
  - **Format** — NTSC, PAL, (SECAM)
  - **TV-V** — Odd, Even, Both (line number selectable)
  - **TV-H**
  - **Event trigger** — COUNT, BURST, EXTRA, MISSING

■ Horizontal deflection system (X axis)

- **Sweep time** — 5ns - 50s/div (1-2-5 steps)
- **Sweep mode** — Auto, Normal, Single
- **Clock accuracy** — ± 0.005%

■ Acquisition function

- **A/D converter**
  - **Resolution** — 8bits
  - **Maximum sampling rate**

DS-8814	CH1,CH3 only : 400MS/s
	4CH simultaneous : 200MS/s
DS-8812	500MS/s

  - **Acquisition memory**

DS-8814	Short memory : 1k-word/CH
	Long memory : 100k-word/CH
DS-8812	Short memory : 5k-word/CH
	Long memory : 100k-word/CH

■ Acquisition mode

- **Roll** — Short memory : 100ms/div – 50s/div
Long memory : 2s/div – 50s/div
- **Normal Sampling** — Short, Long memory : 5ns/div – 50s/div
- **Peak detect**

DS-8814	Short memory : 1μs/div – 50s/div
	Long memory : 100μs/div – 50s/div
DS-8812	Short memory : 2μs/div – 50s/div
	Long memory : 50μs/div – 50s/div

- **Equivalent Sampling**

DS-8814	5ns/div – 200ns/div Short memory only
	Time resolution : Max. 100ps (10GS/s)
DS-8812	5ns/div – 500ns/div Short memory only
	Time resolution : Max. 40ps (25GS/s)

- **Average** — 2 – 256 times (Short memory only)
- **Persistence** — Available

■ Display function

- **X-Y Display**

DS-8814	X1 : CH1, Y1 : CH2 Fixed display
	X2 : CH3, Y2 : CH4 Fixed display
DS-8812	X : CH1, Y : CH2 Fixed display

- **Joint** — Dot / joint
- **Expansion**
  - **Y axis** — within specified volt/div range
  - **Zoom** — within 2.5times of specified volt/div range
  - **X-axis** — Expand by center of screen
  - **Trace**

DS-8814	Max. 6-trace(CH1,CH2,CH3,CH4,Arithmetic1, Arithmetic2) + Max. 8-trace (Reference waveform)
DS-8812	Max. 3-trace (CH1,CH2,Arithmetic) + Max. 10-trace (Reference waveform)

- **Waveform arithmetic**
  - **Arithmetic**

DS-8814	CH1+CH2, CH1-CH2, CH1xCH2, CH3+CH4, CH3-CH4, CH3xCH4, FFT
DS-8812	CH1+CH2, CH1-CH2, CH1xCH2 FFT (DS-8812 : Option)

- **Scale type** — Grid, Axis, Flame
- **Help function** — Japanese, English, Chinese(Simplified, Traditional)
- **Comment input** — Available
- **Max. character input** — 30 letters
- **Clock function** — Year, Month, Date, Time, Minute
- **Status display** — Counter, Time, Auto measurement, Comment selectable

■ Cursors and Automatic measurement

- **Cursor measurement items** △ V, △ T, 1/△ T, V at t

■ Automatic measurement

- **Channels**

DS-8814	CH1,CH2,CH3,CH4
DS-8812	CH1,CH2

- **Items**

DS-8814	Tr,Tf,Vrms,Vmean,freq,Period,+PW, -PW,Duty,+Peak,-Peak,P-P,Top,Base, T-B,△ t,Skew
DS-8812	Tr,Tf,Vrms,Vmean,freq,Period,+PW, -PW,Duty,+Peak,-Peak,P-P,Skew

- **Simultaneous** — Four (4) items

■ Frequency counter
1Hz - 100MHz, 5-digit, ±0.01%

■ Interface

- **RS-232C**
  - **Baud rate** — 2.4k,4.8k,9.6k,19.2k,38.4k,57.6k,115.2k
  - **Data length** — 7,8bit
  - **Parity** — None (Fixed)
  - **Delimiter** — LF, CR/LF selectable
- **GP-IB** — (DS-8814:with DS-539 GP-IB cable option)
(DS-8812:with DS-534 GP-IB card option)
IEEE488.2
  - **Address** — 0 – 30
  - **Delimiter** — LF, CR/LF selectable

■ Save and recall

- **SETUP**
  - **SAVE/UNDO function** — Store/Recall of Panel Setting
- **REF**
  - **SAVE/CLEAR function** — Store/Recall of Reference waveform
- **SAVE/RECALL function**
  - **Media** — ATA card, floppy disk (3.5-inch)
  - **Data type**

DS-8814	Setup data, waveform (CH1,CH2,CH3,CH4)
DS-8812	Setup data, waveform (CH1,CH2)

  - **Record format** — Binary/ASCII formats are available for waveform data
  - **Numbers of data** — ATA card : Max. 9999 for each format
Floppy disk : Max. 200 each format
  - **Time stamp** — Available
  - **Auto Save function** — Waveform data can be automatically stored when the waveform is triggered
  - **Step function** — stored data rate is selectable from 1,2,4,8,16,32,64,128.

■ Hard Copy

- **Data output**

DS-8814	Built-in printer, floppy disk, ATA card
DS-8812	Built-in printer, floppy disk, ATA card, Centronics

- **Output Source** — Display, Setup conditions
- **Auto copy** — Waveform data can be automatically output when the waveform is triggered (ATA card, floppy disk, built-in printer)
- **Built-in printer** — Type :Line thermal printer
  - **Paper size** — 80mmx48Φ 75μ Thermal paper
  - **Feed function** — Available
  - **Roll print** — Available
- **Floppy, ATA card**
  - **Output format** — TIFF, BMP
  - **Numbers of data** — ATA card : Max. 9999 for each format
Floppy disk : Max. 200 each format
- **Centronics**
  - **Output format** — DPU-414, ESC-P09, PC-PR201, TIFE, BMP
- **Calibration signal** — Square wave, 0.6V±1%, 1kHz±0.01%

■ FFT function (DS-8814, DS-8812/Option DS-538)

- **Points** — 1024, 4096
- **Channel** — CH1,CH2,CH3,CH4 : DS-8814
CH1,CH2 : DS-8812
- **Window** — Rectangler, Hanning, Flat top
- **Range** — X:0.48Hz/div – 24MHz/div
1.22GHz/div (Equivalent Sampling)
Y:-124.8dBm - +35.2dBm
1, 2, 5, 10 20dBm/div

■ Other functions

- **Auto setup** — Automatically setup V, H range trigger level for repetitive signal UNDO function available
- **Auto Calibration** — Calibrates offset of 2mV/div – 5mV/div
- **Self Calibration** — Calibrates sensitivity, offset, trigger level

■ Power supply

- **Voltage range** — AC 100-240V ±10%
- **Frequency** — 50/60Hz
- **Power consumption**
  - **With printer operation**

DS-8814	110VA max. (100W max.)
DS-8812	90VA max. (75W max.)

  - **Without printer operation**

DS-8814	95VA max. (80W max.)
DS-8812	75VA max. (59W max.)

  - **Stand by** — less than 1VA

■ Dimensions & weigh

- **Weight** — Approx. 3.0kg excluding accessories
- **Dimensions** — Approx. 215(W) x 170(H) x 166(L)mm

■ Accessories
Probe (DS-8814/4pcs, DS-8812/2pcs), Power cable (1), Fuse (2), Operation manual (1), Thermal paper TP80-1 (1)

Good   Bad