HYPERLABS™
Innovation at Hyperspeed since 1992

# HL1302 Cable Skew Tester

## PRODUCT SUMMARY

The HL1302 Matched Cable Skew Tester is a USB-connected device measuring the delay difference (skew) between a pair of coaxial cables connected to the Differential Stimulus and Receiver Ports. After a preliminary calibration of the time base using the first cable and terminations, the skew of the the second cable is transformed as an impulse on the PC screen. The amplitude is displayed directly as skew in pico-seconds.

## DEPLOYMENT NOTES

The HL1302 is connected and powered via a USB cable connected to a Windows-based PC or laptop.

All specifications contained herein are typical unless otherwise noted.

## Calibration Metrology

Every instrument is calibrated by HYPERLABS at the time of sale using NIST-traceable calibration standards.

To maintain NIST traceability, the HL1302 should be sent to HYPERLABS yearly for calibration and certification.

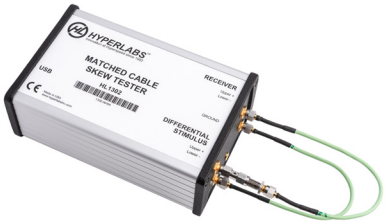
## Key Features and Technical Specifications[1]

| | |
|---|---|
| Number of Channels | 2 |
| Delay (Skew) | *1 to 200 ps* |
| Skew Resolution | 0.5 ps |
| Time Base Range | 1 ns to 4 µs |
| Time Base Accuracy | ± 3% |
| Dimensions | 4.5"x 1.7"x 2.4"<br>110 x 170 x 60 mm |
| Weight | 0.5 kg (1.1 lb.) |
| Temperature Limits | 0° to +40° C, operating |
| RoHS Compliant | Yes, assembled with lead-free solder |
| REACH Compliant | Yes |
| Warranty | 1 year, see website |

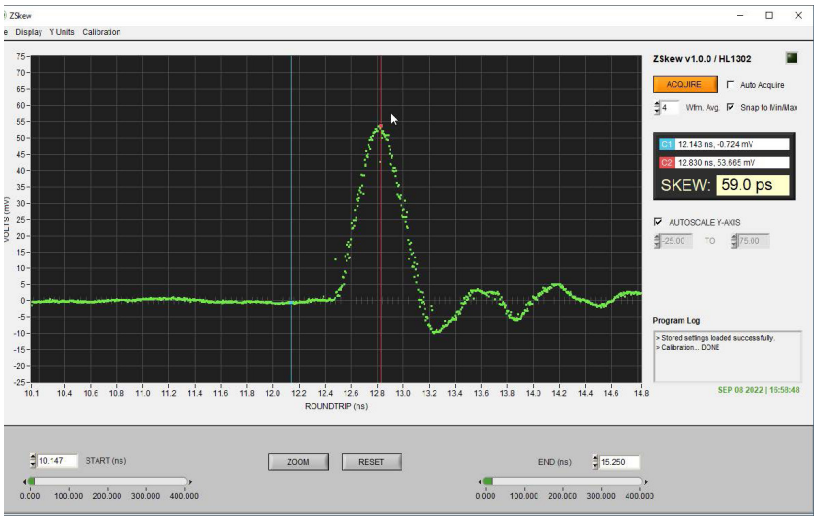
NOTE 1 - The specifications in this table are typical. Full specifications, are available on Pages 2of this datasheet.




*HL1302*




*Alternate view of HL1302 with cables*




*Typical Display of Skew - 65 ps*

## HL1302 Full Specifications

| Parameter | Minimum | Typical | Maximum | Comments |
|---|---|---|---|---|
| Number of Channels | | 2 (1 pair) | | |
| Delay (Skew) | 1 ps | | 200 ps | |
| Skew Resolution | | 0.5 ps | | |
| Stimulus Amplitude | | ± 500 mV | | Into 50 Ω |
| Rise Time (10-90%) | | 200 ps | | |
| Time Base Range | 1 ns | | 4 µs | |
| Time Base Accuracy | | ± 3% | | |
| Operating Temperature | 0° C | | 40° C | Ambient temperature |
| Storage Temperature | -40° C | | 85° C | |
| Connectors | 4 x SMA, USB | | | |
| Interface | Powered and controlled via one USB cable | | | |
| PC Operating System Requirement | Microsoft Windows 7 or later | | | |
| Static Robustness | Compliant with Class 2 of ESDS Component Sensitivity Classification (EDS STM5.1-1998) | | | |
| Calibration Standards | NIST Traceable Calibration | | | |
| Included Accessories | Two 1 ns matched delay coaxial cables and two 50 Ohm Terminations | | | |
| Dimensions (W x D x H) | 4.5”x 1.7”x 2.4”<br>110 x 170 x 60 mm | | | |
| Weight | 0.5 kg (1.1 lb.) | | | |
| RoHS Compliant | Yes, assembled with lead-free solder | | | |
| REACH Compliant | Yes | | | |
| Warranty | 1 year, repair or replacement; see website for details | | | |

## HL1302 Dimensional Drawing

Figure 1 shows a mechanical drawing of an HL1302. Unless otherwise noted, all units are in inches.

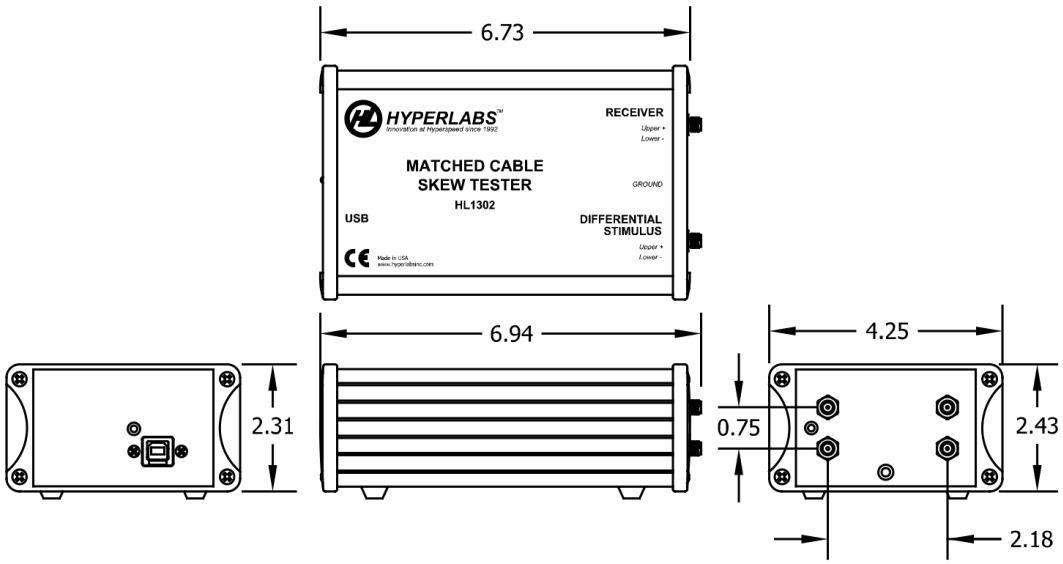



*Figure 1: HL1302 mechnical drawing*