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Agilent 83495A 10 Gb/s Clock Recovery Module

No Clock? No Problem!

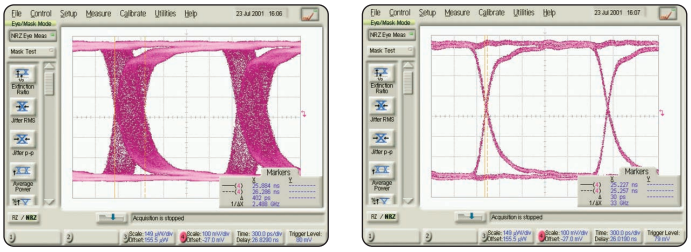


The 83495A is a unique clock recovery module for the 86100 Infiniium Digital Communications Analyzer that provides continuous clock recovery from 9.95 Gb/s to 11.3 Gb/s.

As the push for high-speed serial data transmission and the convergence of 10 Gb/s Multi Source Agreements (MSA's) continues, the demand for flexible and low cost communications equipment is increasing. The support and momentum behind XFP (the 10 Gb/s small form factor pluggable transceiver featuring serial 10 G data streams) is just one example that the industry is moving towards 10 Gb/s multi-protocol, low cost, serial applications.

The 83495A is a clock recovery plug-in module for the Agilent 86100 Infiniium DCA (Digital Communications Analyzer) mainframe. When a separate trigger is not available, or when standards specify that a trigger be derived using a clock recovery unit, the 83495A can be used to obtain a timing reference directly from the signal under test. The 83495A offers a cost efficient solution for a continuous wide range of optical and electrical clock recovery rates from 9.953 Gb/s to 11.32 Gb/s, which includes the emerging standard of 10 Gb Ethernet with Forward Error Correction (FEC).

To ensure interoperability, some applications such as 10 GbE and 10xFC require the use of a clock recovery unit with a specific loop bandwidth when performing mask tests and jitter tests. The 83495A can be used for compliance testing because it has a wide bandwidth setting of 4 MHz, which meets the requirements of the IEEE 802.3ae 10 Gb Ethernet standard.



Identical incoming signals triggered with different loop bandwidths. The left one, triggered with the narrow loop bandwidth, reveals the presence of low frequency jitter on the data. The right one, triggered with a wide loop bandwidth, tracks out low frequency jitter making the signal appear much cleaner.

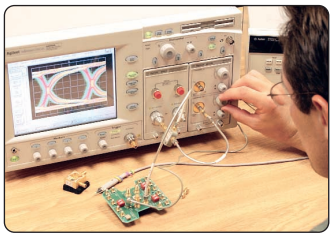
Test compliance or debug designs using different trigger settings

Time domain measurements are only as accurate as the signal source they are triggered from. Measurements such as jitter are highly dependent upon how the analyzer is triggered. The 83495A clock recovery module offers three different trigger sources – a narrow and wide loop bandwidth, and the ability to trigger directly off of the incoming data.

Triggering with a narrow loop BW does not pass low frequency jitter onto the trigger signal so the trigger behaves very close to a true, jitter free, clock. Using this method, designers can gain valuable insight into the true performance of their device.

Test to the XFP requirements with ease

Along with the optical input on the 83495A, the clock recovery module is uniquely equipped with an electrical input for electrical applications where the clock is unavailable. This can be tremendously convenient as designers push to meet the requirements for XFI, the high-speed electrical serial interface for XFP transceivers.



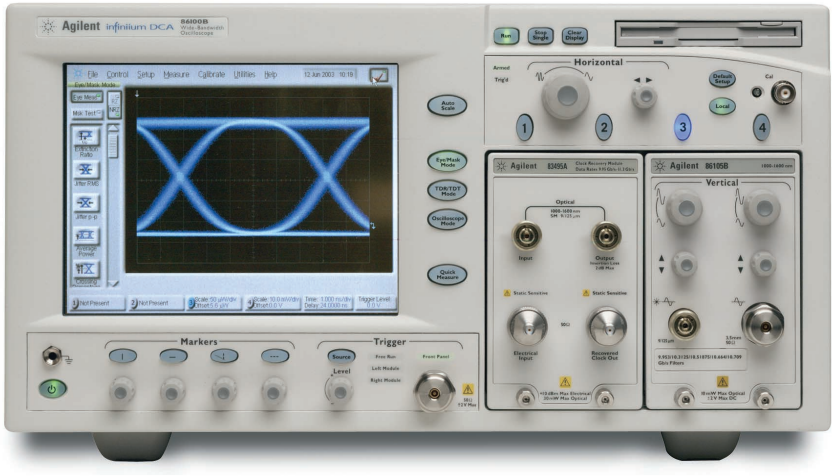
The 83495A gives valuable insight into the design of high speed serial backplanes.

Agilent Technologies

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Part of the family

The 83495A clock recovery module is part of the 86100 DCA family. The Agilent 86105B sampling module paired with the 83495A makes a low cost, flexible solution for multi-protocol 10 Gb/s optical transceiver and component testing. For more information on the broad selection of integrated plug-in modules see the Infiniium DCA Technical Specifications (Lit. No. 5988-5311EN)



The 86105B and the 83495A make a low cost, flexible solution for 10 Gb/s testing.

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