

# DisplayPort AUX Controller

## DP-AUX Data Sheet



### Features & Benefits

- Speeds Up Test Time – No user interaction is required to change source output signal or validate sink silicon state or error count
- Automates DisplayPort Physical Layer Source and Sink Testing
- Fully Integrated with DisplayPort Physical Layer Source Automation Software (Option DPO DSPT)
- Stand-alone GUI provides Flexibility to Perform DisplayPort Tests without Automation Software
- No Need to Learn Vendor-specific Software – A single GUI supports all vendors
- View Decoded AUX Traffic and Hot Plug Detect (HPD) Events from the Device Under Test to the DP-AUX DisplayPort AUX Controller
- Ability to Read and Write DPCD Registers supports Debug Activities
- USB Interface enables the DP-AUX to run on a PC, Oscilloscope, or Arbitrary Waveform Generator

### Applications

- DisplayPort Debug, Characterization, and Compliance for:
  - Silicon Validation
  - Computer System Validation and Integration

### Complete Automation for DisplayPort Testing

The Tektronix DP-AUX DisplayPort AUX Controller automates DisplayPort Physical Layer Source and Sink Compliance Testing. DP-AUX eliminates the need for user interaction during testing and the need to use vendor-specific proprietary software. Engineers can simply select the desired tests to run and work on other tasks while the tests are being executed. The DP-AUX stand-alone GUI can also be used in validation, debug, and characterization of DisplayPort Source and Sink devices.

DP-AUX connects using USB to a PC, Tektronix DPO/DSA/MSO70804 (minimum) oscilloscope, or AWG7000 Series arbitrary waveform generator and connects directly to the DisplayPort Plug Test Fixture (TF-DP-TPA-P) and the DisplayPort Receptacle Test Fixture (TF-DP-TPA-R). The AUX channel connects through SMA connectors on the DP-AUX to the SMA connectors on the DisplayPort Test Fixture. The Hot Plug Detect line connects from the four-pin header on the DisplayPort Test Fixture to the DP-AUX Auxiliary Controller using the included Hot Plug Cable.

### Source Test Automation

Two modes of operation are available. For complete automation DP-AUX is fully integrated into the latest release of Tektronix Source Test Software (Option DPO DSPT). However, the DP-AUX also includes a stand-alone GUI that can be used with or without the DPO DSPT software. The DP-AUX can also be used to support debug, characterization, and verification activities that do not require the DPO DSPT software. DP-AUX removes the requirement that a user manually change the output signal of the device under test by providing automated control of the data rate, voltage level, data pattern, pre-emphasis level, and by enabling or disabling SSC. Additionally, the DPO DSPT Source Automation Software acquires all required waveforms and then performs analysis for each test without manual intervention. The device under test can then be used for other testing purposes as soon as the waveforms have been acquired.

### Sink Test Automation

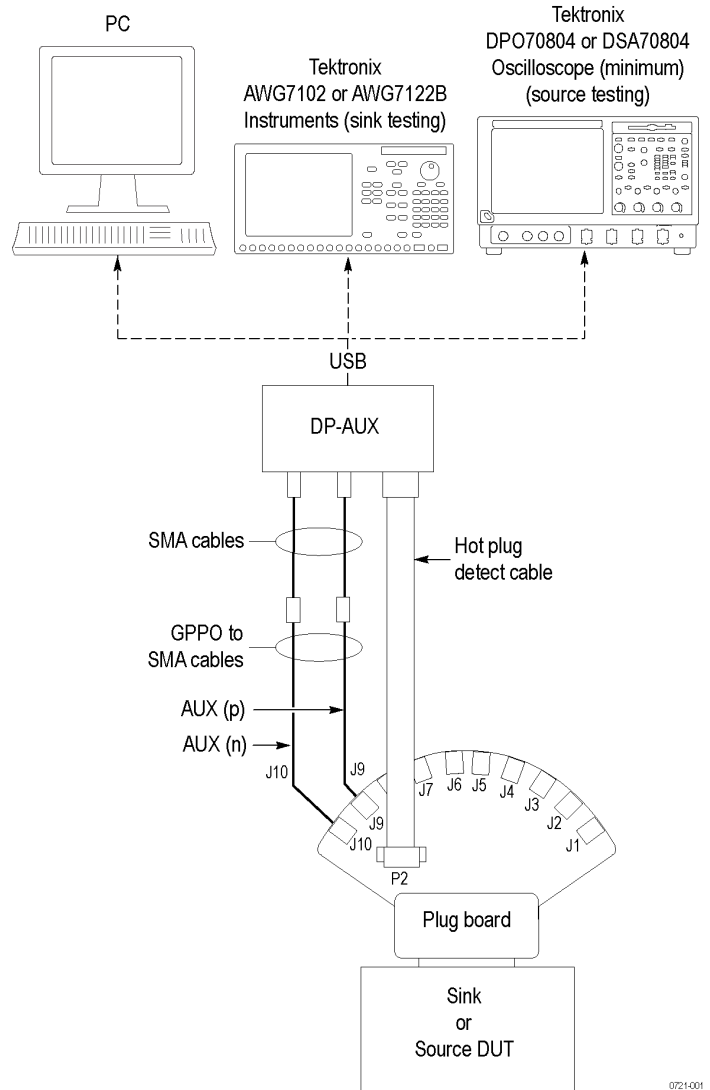
Sink testing no longer requires the need for proprietary software to read and write DPCD registers to validate that link training has been successful and to read the error count of the sink device. DP-AUX sets the receiver up to receive the frequency lock and symbol lock patterns to validate that link training was successful. In addition, DP-AUX is used to check the error counter during the jitter tolerance test to ensure that the errors counted do not exceed the limit outlined in the DisplayPort Compliance Test Specification.

## Characteristics

Cables	cm	in.
USB Type A to Type B Cable Length	91.44	36
SMA to SMA Cable Length	200	78.74
Hot Plug Cable Length	96.42	38

### DP-AUX

Dimensions	mm	in.
Height	27.3	1.075
Width	78.1	3.075
Depth	123.2	4.85



DP-AUX Configuration.

0721-001

### Ordering Information

The DP-AUX can be ordered separately to complement existing DisplayPort solutions for Sink or Source testing. Contact your Tektronix Account Manager for a list of supported Source and Sink devices. Please refer to <http://www.tektronix.com/displayport> for detailed product configuration for Source and Sink testing.

Model	Description
DP-AUX	DisplayPort AUX Controller and Accessories. <b>Includes:</b> DisplayPort AUX Controller Hardware and Software, (2) SMA to SMA Cables, Hot Plug Cable, and USB Type A to Type B Cable

### Service Options

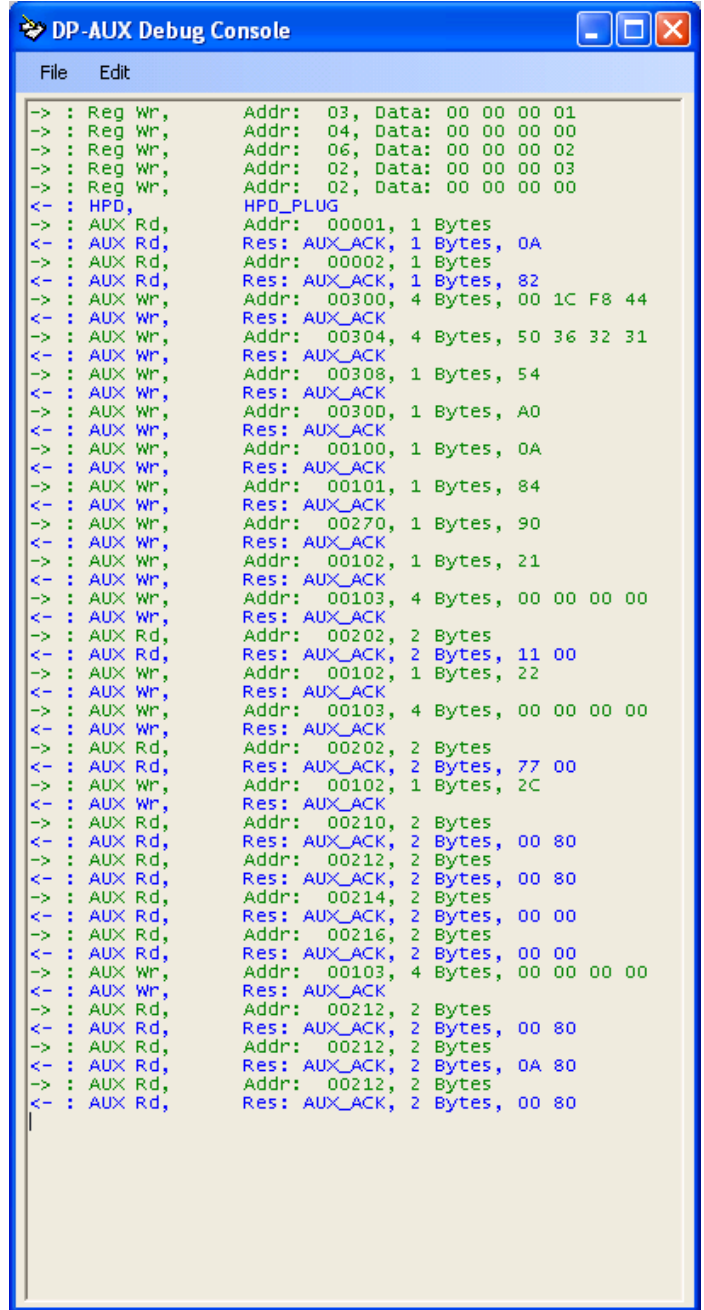
Option	Description
Opt. C3	Calibration Service 3 Years
Opt. C5	Calibration Service 5 Years
Opt. R3	Repair Service 3 Years (includes warranty)
Opt. R5	Repair Service 5 Years (includes warranty)
Opt. CA1	Provides a single calibration event or coverage for the designated calibration interval, whichever comes first

### Repair Service Options

Option	Description
DP-AUX-R5DW	Repair service coverage 5 years (includes product warranty period). 5-year period starts at time of customer instrument purchase. This option is available if the instrument is within product warranty. It is not available once instrument exits warranty period
DP-AUX-R3DW	Repair service coverage 3 years (includes product warranty period). 3-year period starts at time of customer instrument purchase. This option is available if the instrument is within product warranty. It is not available once instrument exits warranty period
DP-AUX-R2PW	Repair service coverage 2 years post warranty. This option is available if the 2-year time period does not extend beyond Long-term Product Support
DP-AUX-R1PW	Repair service coverage 1 year post warranty. This option is available if the 1-year time period does not extend beyond Long-term Product Support
DP-AUX-CA1	Provides a single calibration event or coverage for the designated calibration interval, whichever comes first

### Accessories

Description	Qty Per Probe	Part Number
USB Type A to Type B Cable	1	174-5611-00
Hot Plug Detect Cable	1	174-5612-00
SMA to SMA Cable	2	174-5631-00



Decoded DisplayPort AUX Traffic.



Product(s) are manufactured in ISO registered facilities.



Product(s) complies with IEEE Standard 488.1-1987, RS-232-C, and with Tektronix Standard Codes and Formats.

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**For Further Information.** Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology. Please visit [www.tektronix.com](http://www.tektronix.com)



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