

## ADV7511 HDCP 1.1 Enable/Disable Option

by Chris Vaughn

### HDCP 1.1 FEATURES

The [ADV7511](#) HDMI® transmitter supports HDCP 1.1 features; however, there has been some misunderstanding within the industry as to the proper implementation of some of these HDCP 1.1 features, specifically the enhanced link verification (Pj checking). Because there have been different interpretations of the proper implementation, Analog Devices, Inc., has added a disable option to the [ADV7511](#) for the HDCP 1.1 features. This option is available on [ADV7511](#) devices with a Revision ID (Register 0x00 of the main register map) of 0x14. In previous revisions of the [ADV7511](#), if the Rx indicated within its HDCP responses that it supported HDCP 1.1 features, the [ADV7511](#) automatically invoked this (Pj checking) protocol. The HDCP 1.1 features disable option allows the user to disable this Pj checking with the assertion of an I<sup>2</sup>C register bit.

For users not wishing to employ this option, no changes to software or hardware are necessary.

The default setting leaves HDCP 1.1 features fully enabled so that [ADV7511s](#) with a Revision ID of 0x14 performs the same as the [ADV7511s](#) with a Revision ID of 0x12. With the new silicon, users can disable support for Pj checking.

By default, if the HDCP sink supports the HDCP 1.1 feature set, the DDC controller enables the following functions:

- Enhanced link verification (Pj checking)
- Advance cipher mode
- Enhanced encryption status signaling (EESS)

The [ADV7511](#) now has the option to disable the HDCP 1.1 feature implementation, using the HDCP 1.1 features disable bit (Register 0xCF, Bit 0). The HDCP 1.1 feature implementation is typically only disabled in situations where there is a compatibility issue with the HDCP sink. It is not recommended to disable the feature if the HDCP sink supports it due to the enhanced security that this feature affords. In HDMI mode, the implementation of EESS is mandatory and, therefore, is enabled regardless of this bit setting. However, in DVI mode, implementation of EESS is disabled if the HDCP 1.1 features disable option is set to 1. Refer to the HDCP specification for further details regarding the implementation of the HDCP 1.1 features.

### HDCP 1.1 FEATURES ADV7511 DISABLE OPTION

The [ADV7511s](#) with a Revision ID (Register 0x00) = 0x14 can disable the HDCP 1.1 features, and the [ADV7511s](#) with a Revision ID (Register 0x00) = 0x12 cannot disable the HDCP 1.1 features.

**Table 1. HDCP 1.1 Features ADV7511 Disable Option**

HDCP 1.1 Features ADV7511 Disable Option	Rev ID
No	0x12
Yes	0x14

### Pj CHECKING PROBLEM DETECTION

When the HDCP 1.1 features are selected and an error interrupt occurs with an error code (main map, Register 0xC8, Bits[7:4]) of 0b0011, it indicates a Pj mismatch. If this occurs, it is recommended that the HDCP 1.1 features be disabled by writing 1 to Register 0xCF, Bit 0.

**NOTES**