



A Philips/PolyGram Corporation

TN #46: Restrictions on the Use of Load CLUT Color Instructions in New VSR Hardware

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This technical note describes a hardware restriction with the new VSR chip found in *all* CD-RTOS v1.0 players and CD-I development platforms. This restriction is not described in the current Green Book Specification (14 November 88), but in all likelihood will be included in the next edition.

Originally, the Green Book allowed CD-I applications greater flexibility to set CLUT banks 0, 1, 2, and 3 by Load CLUT Color instructions in plane A and banks 2 and 3 by instructions in plane B. In other words, plane A could set the plane B CLUT, but plane B could not set the plane A CLUT (see section V.5.5, page V-72). This is no longer the case.

We recommend adopting the following methods:

- Plane A instructions should set only CLUT banks 0 and 1; plane B instructions should set only CLUT banks 2 and 3. Banks 2 and 3 can be set from plane A, but plane B instructions can no longer modify these CLUT banks.
- To set CLUT entries for the CLUT8 image coding method in plane A, the application programmer must use the following method:
 1. Set image coding method to CLUT7 in both planes.
 2. Set CLUT banks 0 and 1 from plane A and banks 2 and 3 from plane B.
 3. Finally, set plane A image coding method to CLUT8.

Please note that a different problem with plane B CLUT hardware addressing (swapped CLUT entries) has been resolved with the new VSR chip. Plane B CLUT entries are accessed exactly like plane A entries.