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**ADV7630**

**Register Settings Recommendations**

**Rev 1.1**

**February 2013**

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## About This Document

This document describes ADI register setting recommendations and adjustments for the ADV7630. This document must be used in conjunction with the latest Hardware Manual and Software Manual.

## Disclaimer

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The contents of this document are believed to be correct. If errors within this document are found or clarifications are needed, contact the author: AV-Video Applications, who will respond as soon as possible.

## Revision History

Revision	Date	Changes
1.0	19/04/2012	Initial
1.1	7/02/2013	Added recommended write 68 75 44
1.1	7/02/2013	Removed recommended write 68 75 04

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## 1. HDMI Receiver Register Settings

### 1.1 Recommended I<sup>2</sup>C Addresses

On the ADI evaluation platform, the following register settings are used to configure the variable I<sup>2</sup>C map addresses. These can be configured as required for customer systems.

B0 0C 40	Disable chip powerdown
B0 EA C8	HDMI TXB Map I <sup>2</sup> C address
B0 EB 80	HDMI TXB Packet map I <sup>2</sup> C address
B0 EC 8E	HDMI TXB EDID map I <sup>2</sup> C address
B0 ED 8C	HDMI TXB TEST map address
B0 EE B8	HDMI TXA Main Map I <sup>2</sup> C address
B0 EF 70	HDMI TXA Packet Map I <sup>2</sup> C address
B0 F0 7E	HDMI TXA EDID Map I <sup>2</sup> C address
B0 F1 7A	HDMI TXA TEST map address
B0 F9 64	Repeater/KSV Map I <sup>2</sup> C address
B0 FA 6C	EDID Map I <sup>2</sup> C address
B0 FB 68	HDMI RX Map I <sup>2</sup> C address
B0 F4 80	CEC Map I <sup>2</sup> C address

The only fixed I<sup>2</sup>C addresses in the ADV7630 is for the IO I<sup>2</sup>C map (0xB0).

### 1.2 Recommended Initialization Settings

ADI recommends that these register settings are programmed to set the part correctly in HDMI mode.

#### HDMI RX Map

68 3D 10 ; ADI recommended write  
 68 3E 69 ; ADI recommended write  
 68 3F 46 ; ADI recommended write  
 68 4E FE ; ADI recommended write  
 68 4F 08 ; ADI recommended write  
 68 57 A3 ; ADI recommended write  
 68 58 04 ; ADI recommended write  
 68 6C A2 ; Bit[0] set to 0; Automatic Hot Plug Assert  
 68 6F 04 ; ADI recommended write  
 68 71 05 ; EDID\_PWRSW3P3= 2'b01, EDID\_PWRSW1P8=2'b01, EDID power from System & cable when inserted  
 68 75 44 ; ADI recommended write  
 68 83 F0 ; Enable all clock terminations  
 68 97 C0 ; ADI recommended write  
 68 C0 00 ; ADI recommended write  
 68 CB 01 ; ADI recommended write

#### Repeater

64 74 0F ; Enable all EDIDs  
 64 40 81 ; BCAPS value, (HCDP 1.0)  
 64 7C 80 ; ADI recommended write (Bit[7] to 1)

### 1.3 Recommended HDMI TX Settings

ADI recommends that these register settings are programmed to set the part correctly for transmitting HDMI through HDMI TXA or TXB port.

B8 BA 70 ; ADI Recommended write  
B8 E8 F0 ; ADI Recommended write  
B8 D0 47 ; ADI Recommended write  
B8 D1 38 ; ADI Recommended write  
B8 D3 0C ; ADI Recommended write  
B8 D6 00 ; ADI Recommended write  
B8 DA 68 ; ADI Recommended write  
B8 DB 0B ; ADI recommended write  
B8 E0 90 ; ADI Recommended write  
B8 E1 FC ; ADI Recommended write  
B8 E3 D0 ; ADI Recommended write  
B8 E8 B0 ; ADI Recommended write  
B8 E9 7C ; ADI Recommended write  
B8 EA 85 ; ADI Recommended write  
B8 EC 7C ; ADI Recommended write  
B8 ED 40 ; ADI Recommended write  
B8 EE 40 ; ADI Recommended write  
B8 EF 41 ; ADI Recommended write  
B8 F3 01 ; ADI Recommended write  
B8 F5 C8 ; ADI Recommended write  
B8 F6 08 ; ADI Recommended write  
B8 F7 5C ; ADI Recommended write  
B8 F8 0F ; ADI Recommended write  
B8 F9 FF ; ADI Recommended write  
B8 FA 3F ; ADI Recommended write  
B8 FB FF ; ADI Recommended write  
B8 FC 65 ; ADI recommended write  
B8 FE 08 ; ADI recommended write

### 1.4 HDMI Receiver Dynamic Settings

The following settings and processes are required for the best performance.

#### **For TMDS frequencies less than 27MHz:**

68 85 11 ; ADI recommended write  
68 5A 80 ; ADI recommended write  
68 93 03 ; ADI recommended write

#### **For TMDS frequencies above 27MHz:**

68 85 10 ; ADI recommended write  
68 5A 00 ; ADI recommended write  
68 93 00 ; ADI recommended write

## 1.5 HDMI Transmitters Dynamic Settings

Software should monitor TMDS frequency on both TXA and TXB port. Depending on the TMDS frequency – software should do one of following writes:

**TXA - for TMDS frequencies below 150MHz**

7A 24 00 ; Default setting;

**TXA - for TMDS frequencies above 150MHz**

7A 24 43 ; ADI Recommended write - data delay in the digital to analog transfer

**TXB - for TMDS frequencies below 150MHz on TXB:**

8C 24 00 ; Default 0x00 - ADI Recommended write - data delay in the digital to analog transfer

**TXB - for TMDS frequencies below 150MHz on TXB:**

8C 24 43 ; Default setting;