TI ADS42JBX9 IBIS-AMI Models

User's Guide

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1 Introduction

This document describes the organization, structure, and proper usage of the TI ADS42JBX9 IBIS-AMI models (compiled and approved for external customer release), hereafter referred to as the "model" for short. The model is intended for use by the ADS42JBX9 design team and by ADS42JBX9 customers for system-level modeling and verification. This document assumes that you are familiar with the relevant IBIS-AMI modeling specifications.

1.1 Formatting Conventions

The help readability, various formatting conventions are used throughout this document:

- Hyperlinks to material within and outside this document are marked in blue.
- Courier font is used for file names, code, variables, structures, parameters, and terminal commands.

1.2 Charter of the SerDes IBIS-AMI models

The models are designed in accordance with the IBIS-AMI standard and attempt to model the significant characteristics of most components in the ADS42JBX9. The models are not intended to be an exact representation of ADS42JBX9 components implemented. Rather, the models seek to provide as high a degree of accuracy as is feasible outside of Spice-based models and simulations.

1.3 Is / Is Not Table

The following table describes the features and purposes of the models, as well as the limitations of the models.

Table 1: Model Is / Is Not Table

Is	Is Not
Compiled for 32-bit AMI EDA tool that run in Windows platform	Compiled for any other platform (i.e. 32- or 64-bit Linux)
Compliant to IBIS-AMI 5.0	Compliant to a more recent BIRD revisions, if they exist
Model of ADS42JBX9 functionality, non-idealities, and performance	Exact representation of implemented components

2 About this Release

2.1 IBIS-AMI Model Files

Table 2 shows the key IBIS-AMI model files delivered with the model release as part of the compressed archive.

Table 2: IBIS-AMI files included with the model release

File Name	Type	Description
TI_SN75DP130_AMI_readme.pdf	PDF	TI SN75DP130 AMI model read me.
SN75DP130.ibs	IBIS	Top-level IBIS wrapper for the Tx and Rx AMI model.
TX_SN75DP130.ami RX_SN75DP130.ami	AMI	Parameters file for the Rx model as required by the IBIS-AMI standard. This is a text file which is common for all OS/execution platforms.
TX_SN75DP130.dll RX_SN75DP130.dll	DLL	Windows 32-bit compiled shared library for the Rx model. This shared library includes the AMI_Init, AMI_GetWave, and AMI_Close functions defined in the IBIS-AMI standard.
ADS project	Folder	Demo project for ADS

Note: TX and RX Package s4p models are included in this release kit.

3 Model Settings

The SN75Dp130 is modeled as receiver and transmitter parts as specified by the IBIS-AMI standard. IBIS-AMI tool that support redriver simulation flow is responsible to cascade the receiver to the transmitter model to form a driver module.

RX settings

Paramter	Value	Comment
EQ	0 to 7	Gain increment from 0 to 7

TX settings

Paramter	Value	Comment
L	0 to 3	Amplitude setting
P	0 to 3	Emphasis setting
Note: L1P3, L2P2, L2P3, L3P1, L3P2, and L3P3 are not a valid settings in silicon. However, the model takes the last setting as the output.		

4 Model Verification

This model had been through detail verification and correlation processes. There are three project kits included in this release package for ADS. User can use this project kits as the foundation and start building their system by adding more complex structure to it.

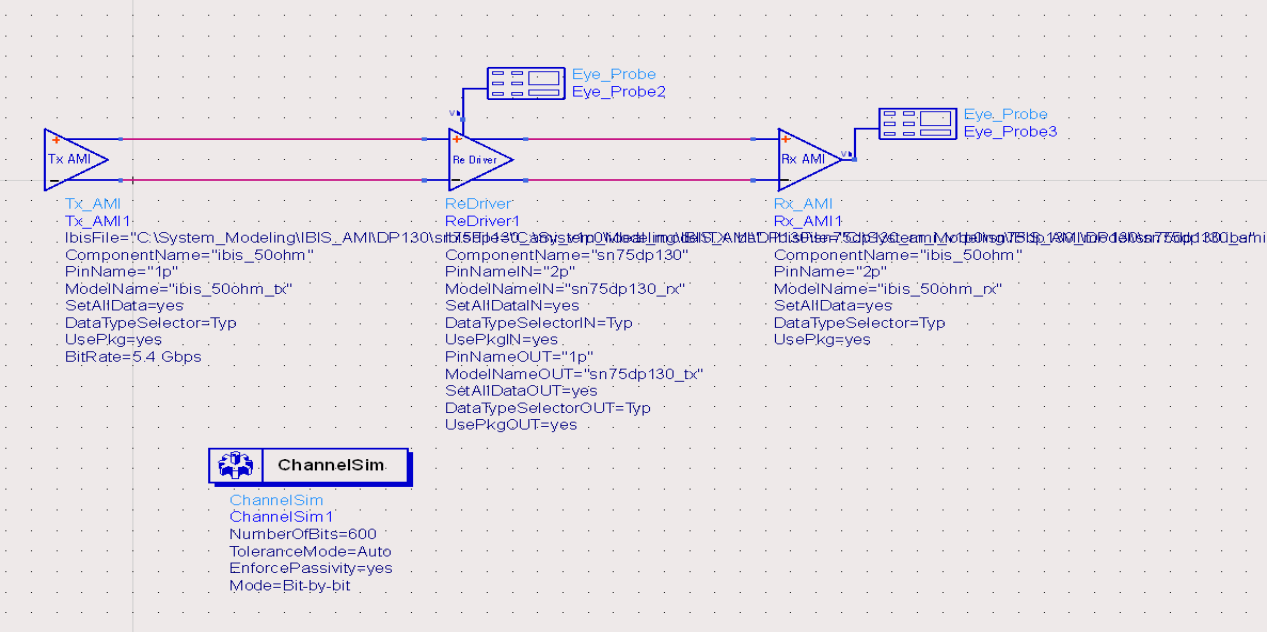

Figure 1. Schematic of Ideal TX drives input of SN75DP130 and ouput of SN75DP130 drives ideal RX in

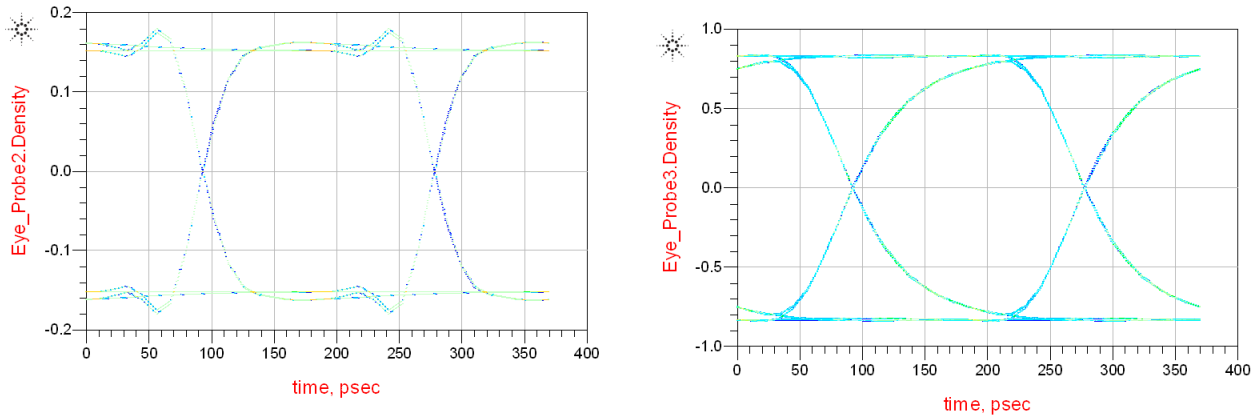

Figure 2. Simualtion results for L3P0 setting.