Application Report
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Connecting Antenna Interface (AIF) With TDM Bridge Chip (IDT 80HFC001)

Daniel Chen

ABSTRACT

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This article was designed for both beginners and advanced users of the Antenna Interface in the embedded processor TMS320C6474 chip support software library. It is intended to be the reference guide for the understanding of the architecture of the library, as well as the programming concepts on top of which the software is built.

The AIF module of the embedded processor TMS320C6474 is a very high-speed high bandwidth data connection to move data in and out of the device. Its architecture includes the MAC, symbol rate, transmit and receive chip rate; the chip rate assist as well as the antenna interface functionality. One of common uses is the WCDMA-FDD modem design. The AIF module consists of six high-speed serial (SERDES) links, compliant to OBSAI-RP3 and CPRI protocols. This module is capable of up to 3.072 Gbps operation per link. However, the IQ stream data transfers studies, during the internship, are only restricted to the implementation on CPRI 2.0. The AIF module is primarily used for user plane data transfers between the uplink and downlink baseband embedded processors and a high-speed serial interface.

This article shows an example of AIF application for data transfers between RF cards and a baseband system for data processing via a TDM bridge chip (IDT 80HFC001). Besides that, AIF is also used for the inter-TMS30C6474 control data transfer (or control data to/from the RF units). You can learn an AIF design in details by this example.

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