



ADSP-215xx/SC5xx Audio Module Release Addendum

Product Information	
Release Date	February 2016
Support	http://www.analog.com/support

This document contains usage notes for the audio module releases when running on ADSP-215xx/SC5xx processors. It provides information in addition to what is already described in the release note and reference guide for each of the audio modules.

The audio modules covered by this document is as follows:

- Dolby Digital AC-3 Decoder, version 5.0.0
- Dolby Intelligent Mixer, version 5.0.0
- Dolby Headphones, version 4.0.0
- Dolby PLIIx, version 6.0.0
- Dolby PLIIz, version 3.0.0
- DTS Neo:6, version 4.0.1
- DTS Neo:X, version 3.0.0
- DTS Surround 5.1 Decoder, version 5.0.0

The ADSP-215xx/SC5xx processor family provides the option of running code out of external memory. Using part of its internal memory as instruction and data caches, the processor minimizes the performance penalties associated with placing code and data in slower memory. However moving data into the external memory space poses some limitations on certain operations which can affect the correct operations of the listed audio modules. One such limitation is the way non-32 bit data is addressed on the ADSP-213xx/214xx processors - the 32-bit L1 memory address is shifted (either up or down depending whether 64-bit or 16-bit addressing is required) to index into the correct word space. This operation however only works in L1 address space, therefore any data accessed via this method would need to be placed in L1 memory to allow correct operation. Table 1 lists all the data sections that are required to reside in L1 for each of the audio modules.

Due to some of the silicon anomalies that exist on early versions of the silicon, running the audio modules out of non-L1 memory is not recommended for silicon revisions earlier than 1.0.

Audio Module	Data/data sections that HAVE to reside in L1 memory
Dolby Digital AC-3 Decoder	Input bit-stream buffer when the decoder is configured to be in “packed input” mode.
Dolby Intelligent Mixer	Constant tables in section “adi_fast_prio0_r”, and user declared scratch buffers.
Dolby Headphones	None.
Dolby ProLogic IIX	None.
Dolby ProLogic IIZ	None.
DTS Surround 5.1 Decoder	Constant tables in section “adi_fastb1_prio0_r”.
DTS Neo:6	None.
DTS Neo:X	Both user declared scratch buffers.

Table 1 Required L1 data sections

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