

SPDIF Auto Detection for STAC9750/51, STAC9752/53 STAC9766/67 and STAC9758/59

SigmaTel Application Note

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OVERVIEW

With the introduction of SPDIF support in the AC'97 revision 2.2 specification (also is included in revision 2.3), many motherboard designs have taken advantage of the cost effective SPDIF support of SigmaTel codecs. While AC'97 describes a method for disabling the SPDIF output, there are a few design rules that can optimize a design when using a SigmaTel codec.

SCOPE

The recommendations and guidelines outlines in this application note apply to all revisions of the STAC9750/51, the STAC9752/53, the STAC9766/67 and the STAC9758.

SPDIF NOT IMPLEMENTED

If SPDIF is not implemented at all in the design, it is important to disable the SPDIF function by forcing pin 48 (SPDIF_OUT) to a high value with a resistor connected to the digital supply. Although it is not necessary to disable the SPDIF function for electrical reasons, disabling the function by pulling pin 48 high will alert the driver that, although the part is capable of supporting SPDIF, the board does not implement SPDIF.





SPDIF IMPLEMENTED

When SPDIF is always used, it is necessary to ensure that the state of pin 48 is low during reset. Usually the termination resistors used in a consumer coaxial implementation are sufficient, but some optical transmitters will cause this line to "float" to a high value unless a 1-10K Ω resistor to ground is used. Current revisions of the STAC9750/51, STAC9752/53, STAC9766/67 and the STAC9758/59 do not have an internal pull-down resistor.



Data sheet, Reference Designs, and additional information are available at <u>www.sigmatel.com.</u>