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Pin-Compatibility Between ADC08D1000/1500 and ADC08D1020/1520

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This note addresses the question:
"*if a board is designed for ADC08D1000 or the ADC08D1500, what, if any, changes must be made in order to upgrade to the newer ADC08D1020/1520 devices?*"

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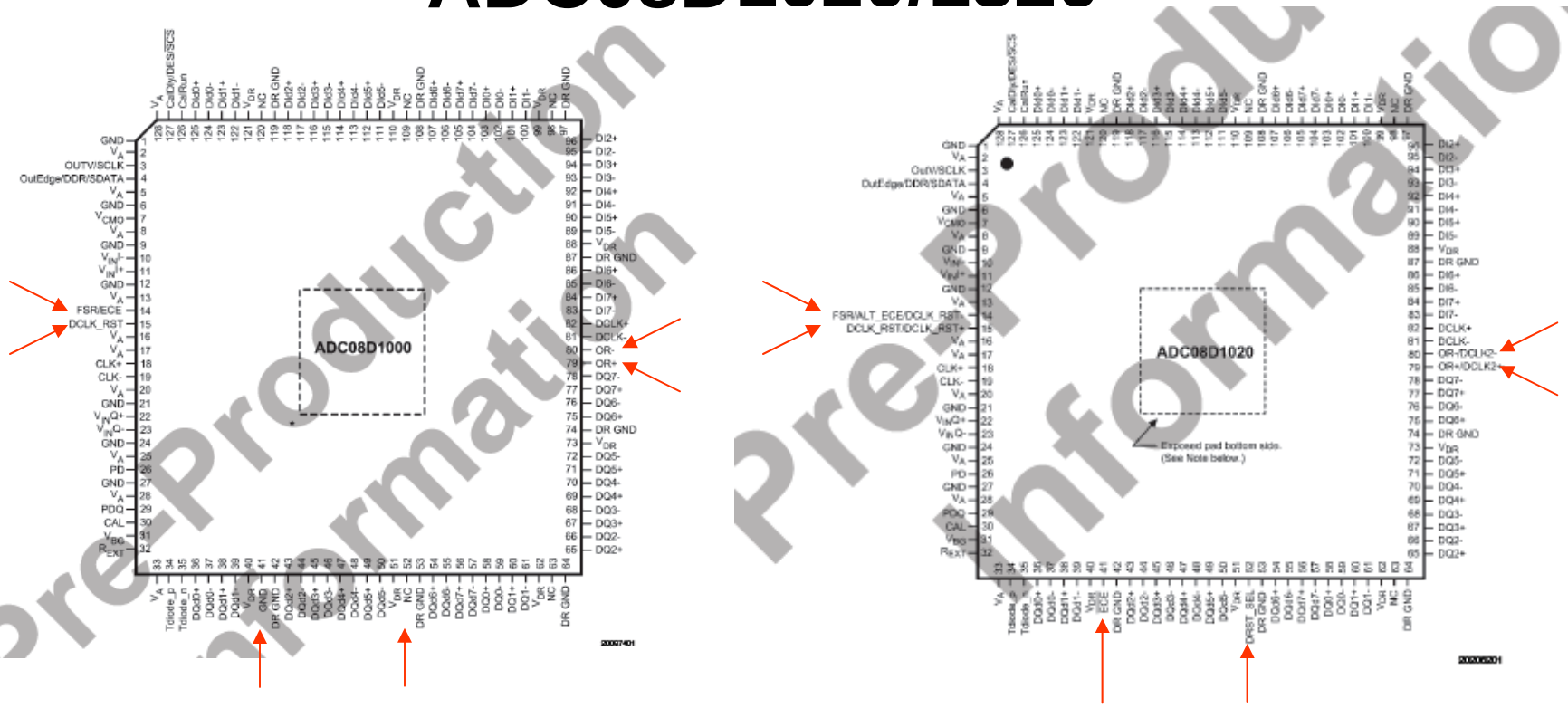
Pinout Comparison: ADC08D1000/1500 versus ADC08D1020/1520



The pins that are affected are pin #s: 14, 15, 41, 52, 79, and 80.

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Pin Functionality Differences

Pin #	Pin Name		Pin Function	
	ADC08D1000/1500	ADC08D1020/1520	ADC08D1000/1500	ADC08D1020/1520
14	FSR/ECE	FSR/ALT_ECE/DCLK_RST-	Pin can be tied to VA or AGND to set the FSR of the ADC. When floating, ADC is in the Extended Control Mode.	Pin has similar function as previous generation device when pin 52 is floating or high. It has the added functionality of DCLK_RST- (negative polarity of differential input) when pin 52 is grounded.
15	DCLK_RST	DCLK_RST/DCLK_RST+	A positive singled-ended CMOS pulse on this pin resets the DCLK.	Pin has similar function as previous generation device when pin 52 is floating or high. It has the added functionality of DCLK_RST+ (positive polarity signal of differential input) when pin 52 is grounded.
41	GND	ECE-	Tied to GND	This pin is now the primary way for putting the device into Extended Control Mode. Tie pin to ground to activate Extended Control Mode.
52	NC	DRST_SEL	No Connect	Pin used to select between a single-ended DCLK_RST (when high) or differential DCLK_RST input (when low).
79	OR+	OR+/DCLK2+	This pin becomes active when an out-of-range input signal level is detected.	Pin has same functionality as previous generation device by default. With a control register bit setting it can be configured as a second DCLK output.
80	OR-	OR-/DCLK2-	This pin becomes active when an out-of-range input signal level is detected.	Pin has same functionality as previous generation device by default. With a control register bit setting it can be configured as a second DCLK output.

Conclusion

- Every attempt was made to maintain a high level of backward compatibility.
- If you want to use the two new features that affect the pinout: the second DCLK in place of the OR or the differential DCLK_RST, then, of course, the connections to those pins will have to be modified.
- If the differential DCLK_RST and second DCLK are irrelevent to your design, then there is only one pin's connection that *may* need to be modified.
  - If the current board design is grounding pin 41, then the ADC08D1020/1520 will enter the extended control mode upon power-up. If your design uses extended control mode at all times, then no board modification is necessary.
  - If your design uses pin-control instead of extended control, or if you power-up with pin-control and then switch to extended control, then pin 41 connection would have to be modified – i.e., either tie it high, or drive its logic state high.