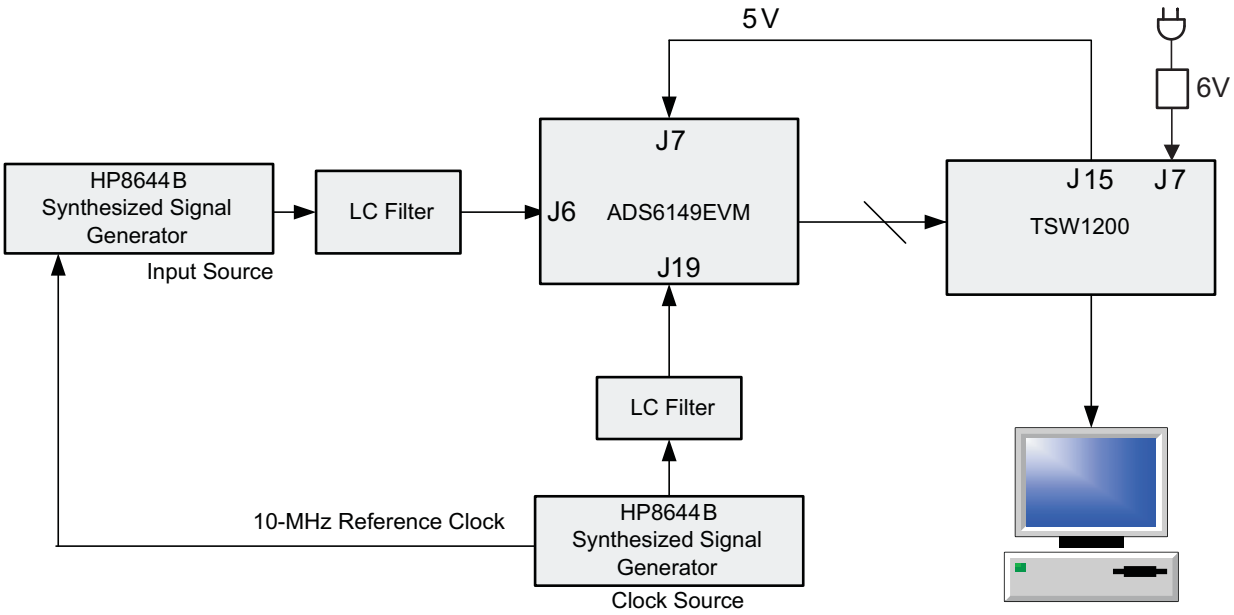
ADS6149EVM



1 EVM Quick-Start Procedure

The ADS6149 EVM provides numerous options for providing clock, input frequency and power to the ADC under evaluation. The quick start procedure describes how to quickly get initial results using the default configuration of the EVM as it was shipped. The EVM can be put back to default configuration by setting all jumpers the default values as described in Table 1. The default configuration of the EVM is for the Input Frequency (IF) and the clock input is for each to be a single ended input that is transformer-coupled to the ADC. The default configuration for the power supply is to provide a single 5V supply to the red banana jack J7, PWR_IN. The default configuration for the EVM is to control the modes of operation by jumper settings for parallel input control pins rather than serial SPI control of the register space. The other modes of operation of the EVM are described in the ADS6149 EVM Users Guide (SLWU061)

CAUTION

Voltage Limits: Exceeding the maximum input voltages can damage EVM components. Undervoltage can cause improper operation of some or all of the EVM components.

A quick-setup procedure for the default configuration of the ADS6149EVM follows:.

1. Verify all jumper settings against the schematic jumper list in Table 1.

Table 1. Jumper List

Jumper	Function	Default Jumper Setting
Interface Circuit Operational Amplifier THS4509 (Bypassed)		
SJP1	AMP_OUT+	1-2
SJP2	AMP_OUT–	1-2
JP7	$\overline{PD}$	1-2
SJP5	AMPIN-	1-2
ADC Circuit		
JP12	Parallel	1-2
JP11	SDA	open
JP9	SEN	1-2
JP15	OE	open
J2	DFS	open
J3	MODE	1-2
J1	SEN	open
Clock Interface Circuit (Bypassed)		
SJP4	CLOCKIN	1-2
SJP7	CLOCKIN, Y0, Y1P SELECT	1-2
SJP6	Y1N SELECT	1-2
J14	PWRDWN CDC	1-2
Power Supply		
JP13	3.3VA_IN	1-2
JP14	3.3VD_IN	1-2
JP16	TPS79501 INPUT SELECT	1-2
JP19	5V_AUX	1-2
JP17	TPS5420 INPUT SELECT	NO SHUNT

2. Connect the 5-V supply between J7 and J12 (GND). If you are using the TSW1200 for capture, it also can be used to source 5 V for the EVM. On the TSW1200, configure JP8 to short 1-2, J22 to short 1-2, and jumper over 5 V from the banana jacks on the TSW1200 to J7 on the ADC EVM. Do not connect a voltage source greater than 5.5 V.
3. Switch on power supplies.
4. Using a function generator with 50-Ω output impedance, generate a 0-V offset, 1.5-Vpp sine-wave clock into J19. The frequency of the clock must be within the specification for the device speed grade.
5. Use a frequency generator with a 50-Ω output impedance to provide a 0-V offset, –1-dBFS-amplitude sine-wave signal into J6. This provides a transformer-coupled differential input signal to the ADC.
6. Connect the TSW1200 or suitable logic analyzer to J10 to capture the resulting digital data. If a TSW1200 is being used to capture data, follow the additional alphabetically labeled steps.
   a. After installing the TSW1200 software and connecting the TSW1200 to the USB port, open the TSW1200 software.
   b. Depending on the ADC under evaluation, select from the TI ADC Selection pulldown menu.
   c. Change the ADC Sample Rate and ADC Input Frequency to match those of the signal generator.
   d. After selecting a Single Tone FFT test, press the Capture Data button.

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