

## ***TxDAC Family Evaluation Board Test Procedure for AD9740/42/44/48ACP-PCBZ***

### **Jumper Setting JP1 IN**

### **Hardware Setup**

1. Solder/Install an edge mount SMA connector at J701 of the SDP-H1.
2. Connect 2.5 volts supply to DVDD, AVDD and CVDD terminals on the AD9744 Eval. Board.
3. Connect an [SMA Tee Adapter Female-Male-Female \(PE9182\)](#) to the output of a Synthesized Signal Generator.
4. Connect one side of the SMA Tee Adapter Female-Male-Female to J701 on the SDP-H1.
5. Connect the other side of the SMA Tee Adapter Female-Male-Female to S5 of the AD9144 Eval. Board.
6. Connect a ribbon cable from the **right** side of CMOS DAC/DPG2 INTERFACE 012816 Rev. A Board to J1 of the AD9744 Eval. Board.
7. Set the Synthesized Signal Generator frequency to 115 MHz with an Amplitude of 10dBm.
8. Connect S3 Output on the AD9744 Eval. Board to a Spectrum Analyzer.
9. Apply power to the Eval board. The board should draw ~120mA.

### **Software Setup**

1. Select DPG Downloader
2. Add Generated Waveform.
3. Select 16 for DAC Resolution
4. Select Single Tone – Sample Rate is 115M for 115 MHz – Desired Frequency is 5.1M for 5.1 MHz.
5. Select (check) Unsigned Data
6. Select Generate Complex Data (I & Q)
7. SDP-H1 Unit 1 field select Generic, LVCMOS-2.5V (SMA) as Port Configuration, Multi-DPG Sync: Single
8. In Data Playback choose 2 Independent Vectors:
  - I Data Vector 1I: Single Tone – 5.103 MHz; 0.0dB; 0.0\* (In-Phase)
  - Q Data Vector 1Q: Single Tone – 5.103 MHz; 0.0dB; 0.0\* (Quadrature)
9. Hit Download Vector button (down arrow) and then hit arrow pointing east to Run/Play.

### **Verification**

1. Set Spectrum Analyzer Start Freq. = 0 MHz, Stop Freq. = 65 MHz, Ref Level -10dBm, SWT = 160 ms, RBW 30kHz, VBW = 30kHz.
2. Check S3 OUTPUT fundamental is at ~5.01 MHz with amplitude close to ~ -1.00dBm. The spectrum should have a noise floor that is below -75 dBm and a clean single tone with spurs that are slightly above or below the -70dBm level. Measuring from the peak of the fundamental to the highest spur, SFDR (Spurious Free Dynamic Range) should be about -65dBm.

