19-0027; Rev 0; 10/04

# MAX3784A Evaluation Kit

Evaluates: MAX3784A

## General Description

The MAX3784A evaluation kit (EV kit) simplifies evaluation of the MAX3784A 5Gbps equalizer with increased output signal amplitude. The EV kit enables testing of all device functions. SMA connectors with 50Ω controlled impedance to the MAX3784A are provided for all high-speed ports to facilitate connection to test equipment.

## Features

- **Fully Assembled and Tested**
- **Fully Matched for Best Return Loss**
- **SMA Connectors for All High-Speed Inputs and Outputs**
- **Calibration Test Strip**

## Component List

| DESIGNATION | QTY | DESCRIPTION |
|---|---|---|
| C1 | 1 | 33µF tantalum capacitor AVX TAJC336K010 |
| C2–C9 | 8 | 0.1µF ±10%, 10V min ceramic capacitors (0402) |
| L1 | 1 | 4.7µH inductor Coilcraft 1008CT040XJBC |
| J3–J6 | 4 | SMA connectors, edge mount, tab contact EFJohnson 142-0701-851 |
| J9 | 1 | 2-pin header, 0.1in center |
| TP1, TP2, TP7, TP8 | 4 | Test points Digi-Key 5000K-ND |
| U1 | 1 | MAX3784A, 16-pin QFN **Note:** U1 has an exposed pad, which requires that it be solder-attached to the circuit board to ensure proper functionality of the part. |
| None | 1 | MAX3784/MAX3784A EV kit circuit board, rev B |

## Ordering Information

| PART | TEMP RANGE | IC PACKAGE |
|---|---|---|
| MAX3784AEVKIT | 0°C to +85°C | 16 QFN |

## Component Suppliers

| SUPPLIER | PHONE | FAX |
|---|---|---|
| AVX | 843-444-2863 | 843-626-3123 |
| Coilcraft | 847-639-6400 | 847-639-1469 |
| Murata | 415-964-6321 | 415-964-8165 |



***For pricing, delivery, and ordering information, please contact Maxim/Dallas Direct! at 1-888-629-4642, or visit Maxim's website at www.maxim-ic.com.***

## Quick Start

1) Connect a +3.3V power supply to TP1 ($V_{CC}$). Connect the power supply ground to TP2.

2) Connect a differential signal between 400mV and 1000mV to the inputs IN+ and IN- using 50Ω cables.

3) If not already done, disconnect jumper test point J9. This ensures that the part is enabled and not in standby mode.

4) Connect signals OUT+ and OUT- to a >10GHz oscilloscope with 50Ω input terminations. Monitor output signals.

5) The signal generator should produce a short run length (CID < 20), DC-balanced pattern such as a PRBS $2^7$ - 1 or K28.5. Set the data rate to 5Gbps.

6) Evaluation: After the board has been initially checked out, evaluation can begin with a FR4 PC board. It is advisable to start with a board length of 20in and then progress to longer lengths.

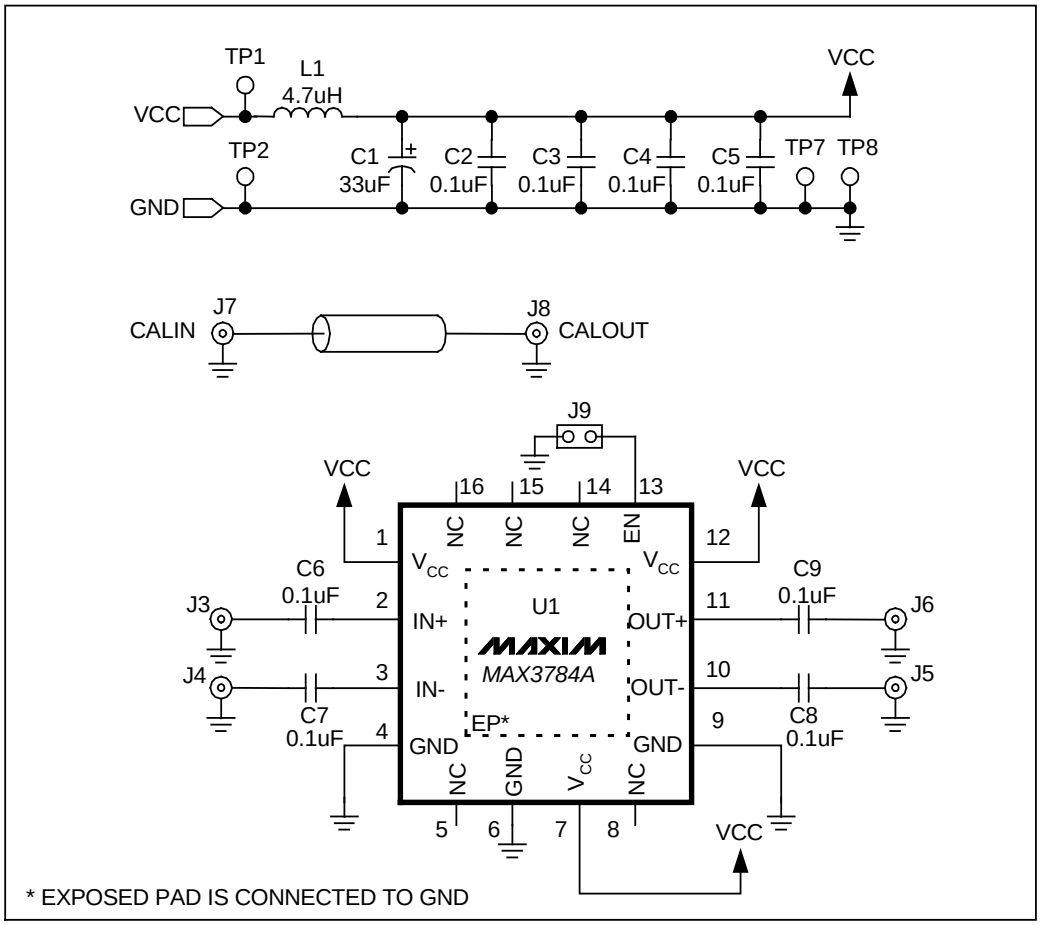



*Figure 1. MAX3784A EV Kit Schematic*

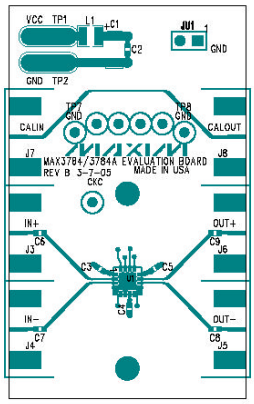



*Figure 2. MAX3784A EV Kit PC Component Placement Guide—Component Side*

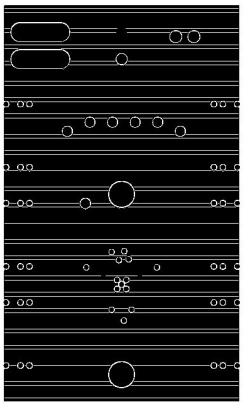


*Figure 5. MAX3784A EV Kit PC Board Layout—Power Plane*

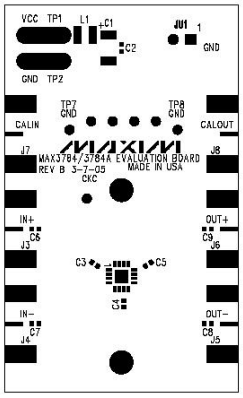



*Figure 3. MAX3784A EV Kit PC Board Layout—Component Side*

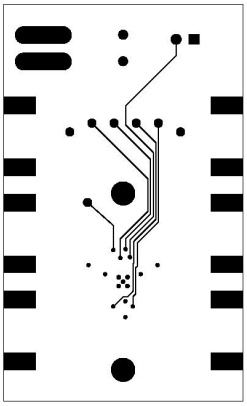


*Figure 6. MAX3784A EV Kit PC Board Layout—Solder Side*

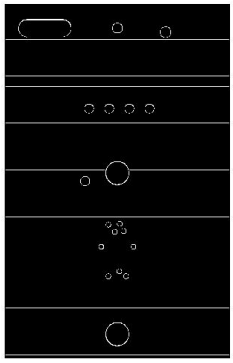


*Figure 4. MAX3784A EV Kit PC Board Layout—Ground Plane*

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