

FEATURES

- Single power supply
- AC-coupled outputs
- SMA I/O connectors
- DIP switch controlled divider selection
- DIP switch controlled reset function

AVAILABLE MEASUREMENTS

The SY89874U evaluation board allows the following measurements:

- Frequency performance
- Output eye pattern generation
- Jitter
- Output rise/fall time
- BER testing

DESCRIPTION

This manual provides information on the SY89874U evaluation board. It should be used in conjunction with the SY89874U datasheet, which contains full specifications of the SY89874U.

The SY89874U evaluation board enables fast and thorough evaluation of the SY89874U fanout buffer/translator. The board is designed in multiple layers for better performance and simpler signal evaluation.

EVALUATION BOARD

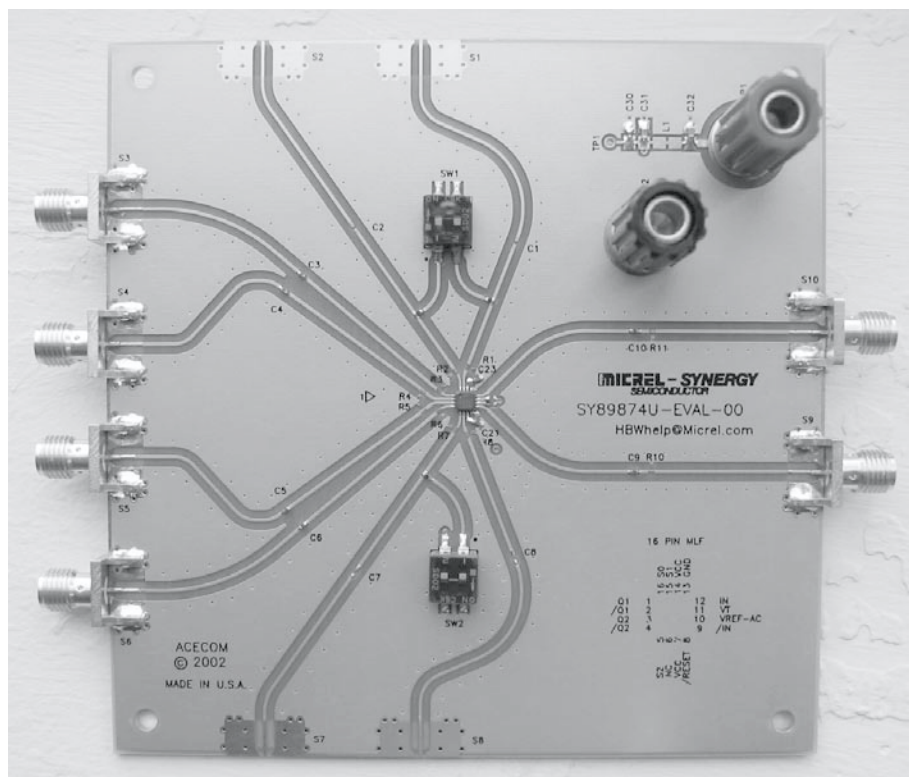


Figure 1. SY89874U Evaluation Board

MEASUREMENT SETUP

Equipment used for time domain measurements:

- Agilent 83752A Synthesized Sweeper
- Agilent 70004A Display
- Agilent 70843B Error Performance Analyzer
- Agilent 86100A Wide-bandwidth Oscilloscope
- Agilent E3620A DC Power Supply
- Matched high-speed cables w/SMA connectors

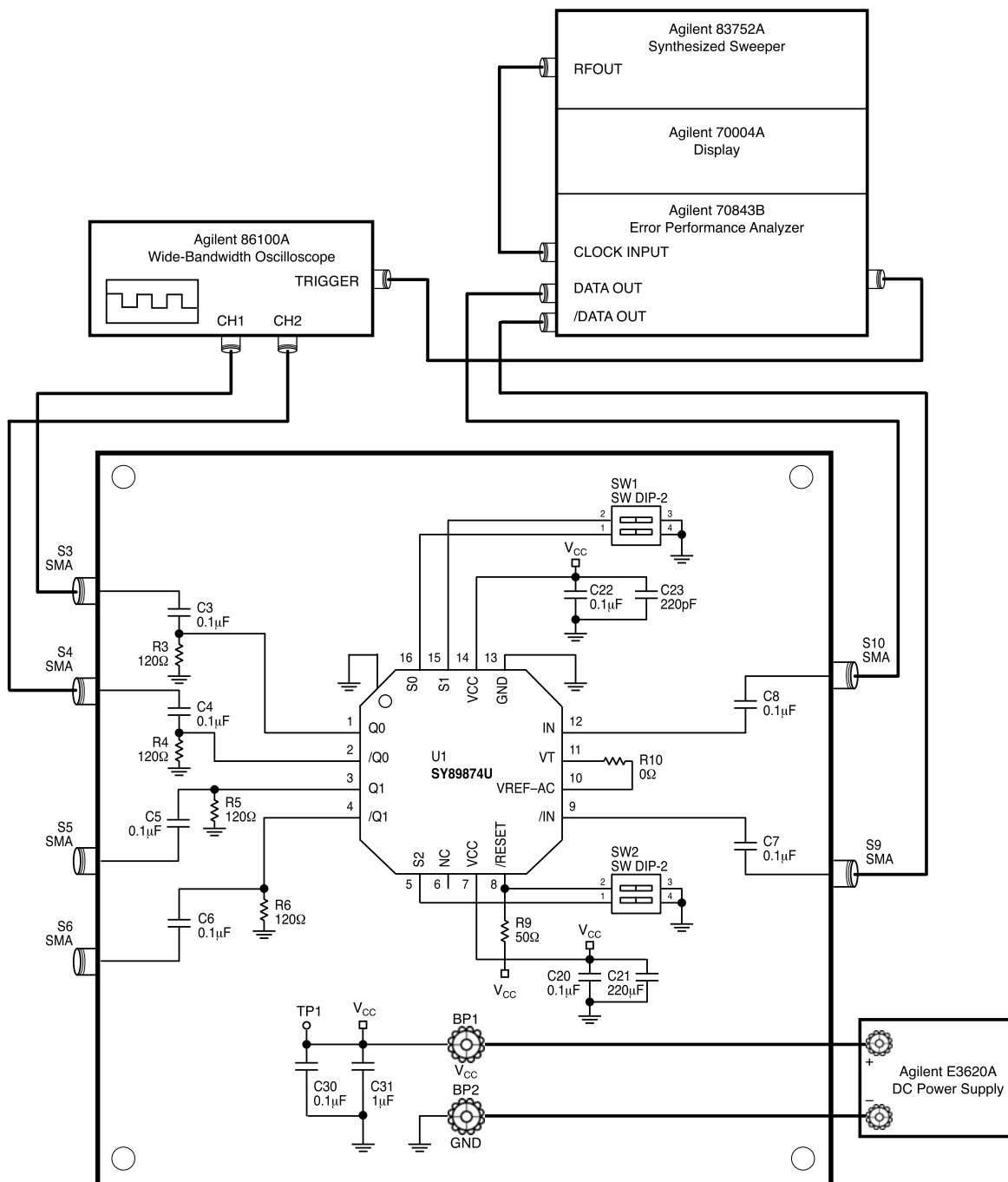


Figure 2. Setup for Measurements

SETUP FOR MEASUREMENTS (FIGURE 2)

1. Connect power; a single power supply is used. Connect BP1 (V_{CC}) to +3.3V. Connect BP2 (GND) binding post to supply ground. See SY89874U datasheet for power supply range.
2. Set SW1 and SW2 to choose divider operation.
 - a. Set switch 1 on SW1 off to set S0 high.
 - b. Set switch 2 on SW1 off to set S1 high.
 - c. Set switch 1 on SW2 off to set S2 high.
3. Set SW2 to reset device.
 - a. Set switch 2 on to reset device.
4. Set signal generator for appropriate output swing amplitude, data rate and bit pattern, as allowed by the SY89874U datasheet. There is no need to set DC-offset as the board is AC-coupled. Ensure the signal generator is capable of driving AC-coupled loads. The SY89874U evaluation board does not provide 50 Ω source termination resistors.
5. Connect desired SY89874U outputs to the oscilloscope. Unused outputs of a switching pair must be terminated. Ensure the oscilloscope is triggered properly. The oscilloscope must have internal 50 Ω terminations to ground. Choose desired measurements on oscilloscope.
 - a. Please refer to oscilloscope's manual for eye pattern, total jitter and rise/fall measurements.
 - b. For BER testing, feedback an output to the BERT data input. After resetting the error count, the error count should remain zero. See BERT manual for more details.

BILL OF MATERIALS

Item	Part Number	Manufacturer	Description	Qty.
BP1	7004K-ND	Keystone ⁽¹⁾	Red binding post	1
BP2	7005K-ND	Keystone ⁽¹⁾	Black binding post	1
C3, C4, C5, C6, C9, C10, C20, C22, C30	PCC1731CT-ND	Panasonic ⁽²⁾	0.1μF surface mount capacitor, size 0402	13
C21, C23	PCC1706CT-ND	Panasonic ⁽²⁾	220pF surface mount capacitor, size 0402	2
C31, C32	PCC1915CT-ND	Panasonic ⁽²⁾	1μF surface mount capacitor, size 0603	2
R9	P49.9LCT-ND		49.9Ω surface mount resistor, size 0402	1
R10	311.0.0JCT-ND		0Ω Phicomp surface mount resistor, size 0402	1
S1, S2, S3, S4, S5, S6	142-0701-851	Keystone ⁽¹⁾	End launch SMA	6
SW1, SW2	CKN3054-ND		2-DIP switch	2
TP1	TSW-101-07-S-S	Samtec ⁽³⁾	1-header through hole terminal strip	1
U1	SY89874U	Micrel Semiconductor ⁽⁴⁾		1

1. Keystone tel: 800-247-8256

2. Panasonic tel: 847-468-5624

3. Samtec tel: 800-726-8329

4. Micrel Semiconductor tel: 408-944-0800

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