FEATURES

- **Single power supply**
- **AC-coupled outputs**
- **DC-coupled inputs**
- **SMA I/O connectors**
- **DIP switch controlled multiplexer select lines**

AVAILABLE MEASUREMENTS

The SY100EP58V 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 SY100EP58V evaluation board. It should be used in conjunction with the SY100EP58V datasheet.

The SY100EP58V evaluation board enables fast and thorough evaluation of the SY100EP58V 2:1 multiplexer. The board is designed in multiple layers for better performance and signal evaluation.

EVALUATION BOARD

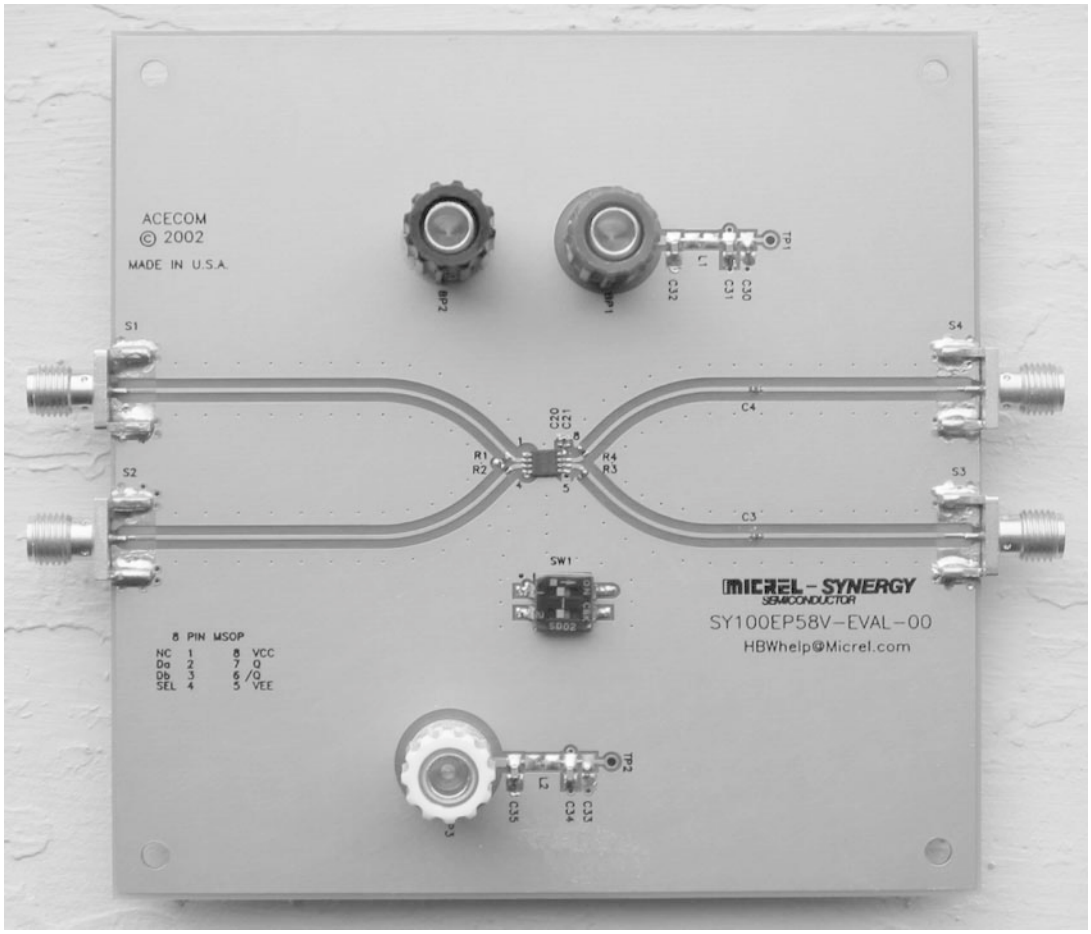

Figure 1. SY100EP58V Evaluation Board

MEASUREMENT SETUP

Equipment Used for 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

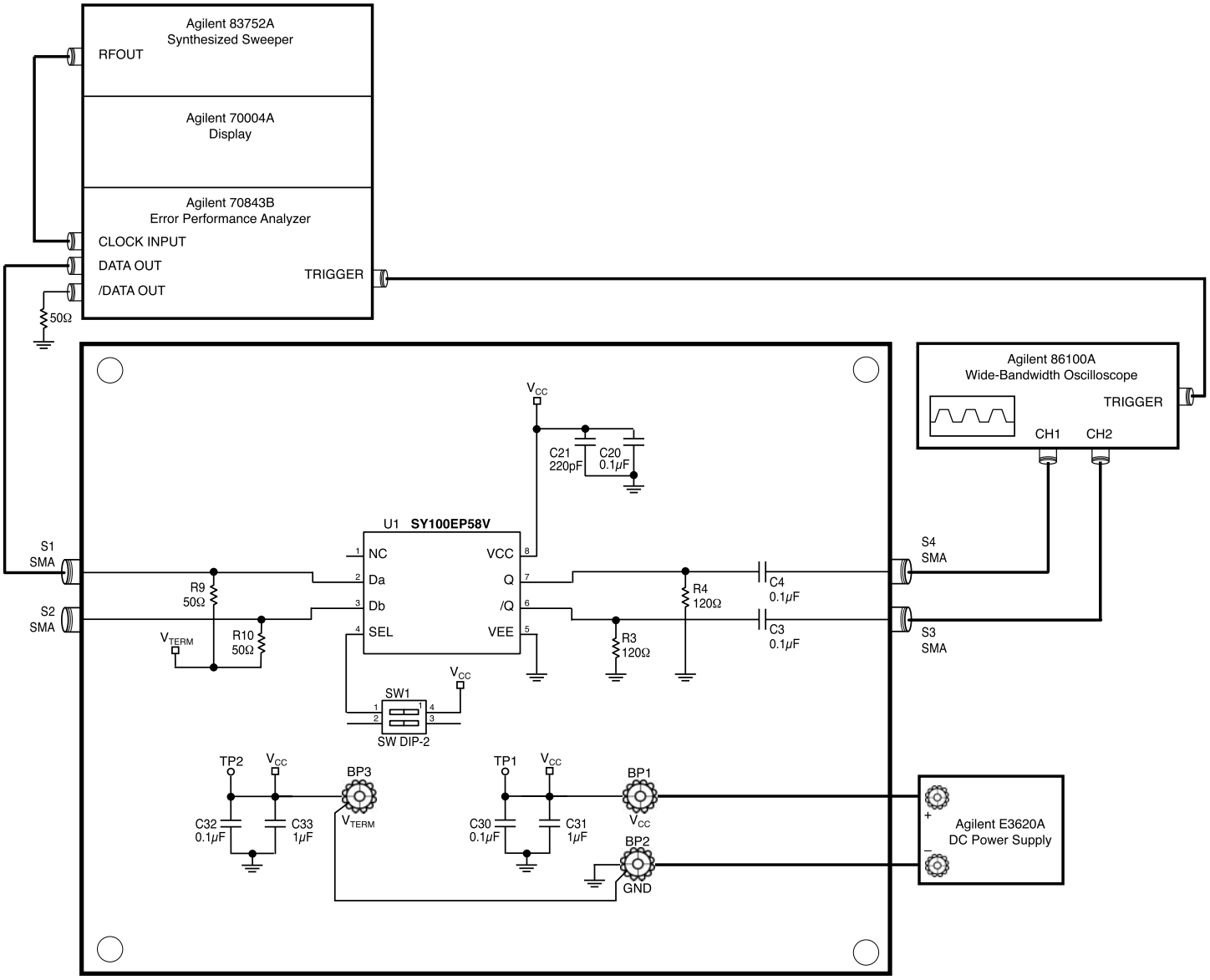

Figure 2. Setup for Measurements

Procedure 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 SY100EP58V datasheet for power supply range. However, it is not recommended to use the SY100EP58V evaluation board at the +5V supply range.
2. Set SW1 for desired multiplexer operation.
   a. Set switch 1 off to set SEL low. Set switch 1 on to set SEL high.
3. Set signal generator for appropriate output offset, amplitude, data rate and bit pattern, as allowed by the SY100EP58V datasheet. Connect the signal generator's outputs to desired inputs on the evaluation board. The SY100EP58V evaluation board provides 50Ω source termination resistors.
4. Connect desired SY100EP58V outputs to the oscilloscope. Unused outputs of a switching pair must be terminated. Ensure the oscilloscope is triggered properly. The oscilloscope must have internal 50Ω 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 desired 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	7006K-ND	Keystone[1]	red binding post	1
BP2,BP3	7007K-ND	Keystone[1]	black binding post	2
C3,C4,C20,C30,C33	PCC1731CT-ND	Panasonic[2]	0.1µF surface mount capacitor, size 0402	5
C31,C32,C33,C34	PCC1915CT-ND	Panasonic[2]	1µF surface mount capacitor, size 0603	4
C21	PCC1706CT-ND	Panasonic[2]	220pF surface mount capacitor, size 0402	1
S1,S2,S3,S4	142-0701-851	Johnson[3]	end launch SMA	4
R1,R2	P49.9LCT-ND	Digikey[4]	49.9Ω surface mount resistor, size 0402	2
R3,R4	P130LCT-ND	Digikey[4]	130Ω surface mount resistor, size 0402	2
SW1	CKN3054-ND	Digikey[4]	2-DIP switch	1

1. Keystone tel: 800-221-5510

2. Panasonic tel: 847-468-5624

3. Johnson Components tel: 800-247-8256

4. Digikey tel: 800-344-4539

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