GoLogic Specifications

Sampling methods

Normal timing analysis
The GoLogic™ oversamples the input signals at a fixed sampling rate to expose timing relationships between signals. All channels are available at sampling rates from 500 Hz to 250 MHz. 36 channels are available at 500 MHz (2 nanosecond resolution). 72-channel models supports both 36 and 72 channel modes.

Transitional timing analysis
All channels are available at frequencies from 500 Hz to 125 MHz. Same as "normal" timing analysis except a sample is stored only when a transition is detected on at least one channel. Each channel may be defined to detect or ignore transitions. A 32-bit time stamp is stored with each sample to determine the elapsed time. Memory depth is halved when using transitional timing analysis. For example, a 1M GoLogic™ can capture up to 512K samples.

Simple state analysis
A single clock signal drives the GoLogic using channel CA0. External clocks up to 125 MHz are supported. All channels capture data except clock input CA0. No time stamp is stored so the full memory depth is available. Data can be stored on the clock signal's rising edge, falling edge, or both edges.

Simple state with time stamp
Same as Simple state analysis (above) except a 32-bit time stamp is also stored with each sample. Most useful when using selective storage (described later). Memory depth is halved when using simple state with time stamp.

Complex state analysis
De-multiplex signals that share pins. Also synchronizes signals that do not share pins but are output at different times. Used with microprocessors like the 8051 or 80x86. External clocks up to 125 MHz are supported. Up to 4 channels are combined to drive the GoLogic. All channels capture data except clock inputs CA0 through CA3. Data can be stored on a combination of rising edges, falling edges, both edges, high states, or low states. No time stamp is stored so the full memory depth is available.

4-channel Transitional timing analysis
Behaves the same as full transitional timing mode except only channels CA0 through CA3 are available. Using only four channels restores the full memory depth. For example, a 1M GoLogic™ captures up to 1M samples across 4-channels. This mode is ideal for analyzing serial data such as I2C.

I2C State analysis
• Special sampling mode for analyzing the Philips Semiconductor® Inter-Integrated Circuit™ bus (called IIC or I2C). GoLogic shifts the serial I2C data into 10-bit words that contain the packet address and data. Therefore, you can trigger on complex series of I2C addresses or data values.

Memory Depth

1M GoLogic-36™

Sampling mode	Channels	Samples
Normal timing analysis	36	1,048,576
Transitional timing analysis	36	524,288
Simple state analysis	35	1,048,576
Simple state with time stamp	35	524,288
Complex state	32	1,048,576
4-channel transitional	4	1,048,576
I2C analysis	fixed	1,048,576

1M GoLogic-72™

Sampling mode	Channels	Samples
Normal timing analysis	72	1,048,576
Transitional timing analysis	72	524,288
Simple state analysis	71	1,048,576
Simple state with time stamp	71	524,288

Complex state	68	1,048,576
4-channel transitional	4	1,048,576
I2C analysis	fixed	1,048,576

72-channel models also support these "Double-Depth" modes...

Normal timing analysis	36	2,097,052
Transitional timing analysis	36	1,048,576
Simple state analysis	35	2,097,052
Simple state with time stamp	35	1,048,576
Complex state	32	2,097,052

2M GoLogic-72™

Sampling mode	Channels	Samples
Normal timing analysis	72	2,097,052
Transitional timing analysis	72	1,048,576
Simple state analysis	71	2,097,052
Simple state with time stamp	71	1,048,576
Complex state	68	2,097,052
4-channel transitional	4	2,097,052
I2C analysis	fixed	2,097,052

72-channel models also support these "Double-Depth" modes...

Normal timing analysis	36	4,194,104
Transitional timing analysis	36	2,097,052
Simple state analysis	35	4,194,104
Simple state with time stamp	35	2,097,052
Complex state	32	4,194,104

Triggering

Trigger patterns
• 8 nanosecond trigger resolution
• Eight normal patterns: trigger when channels match a pattern, don't match, or equal any value.
• Two edge patterns: trigger on rising or falling edge. Available only in timing analysis mode.
• Two 32-bit range patterns: trigger when pod A and B channels fall between an upper and lower boundary. Available only in state analysis mode.

Trigger sequencing
• Eight sequence levels
• Two normal trigger patterns plus one edge/range pattern is detected simultaneously on each sequence level.
• One 20-bit timer/counter per sequence level while in timing analysis mode
• One 20-bit counter per sequence level while in state analysis mode
• One 32-bit global timer
• Sequence actions available when a trigger pattern is detected...
    Trigger (start capturing data)
    Go to level n
    Start global timer
    Increment level's counter
    Reset level's counter

Selective storage options
• Available with state analysis mode.
• Storage options before the trigger is detected...
    Store all data before the trigger sample
    Store no data before the trigger sample
    Store only data that matches the selected patterns
• Storage options after the trigger is detected...
    Store all data after the trigger sample
    Store only data that matches the selected patterns
• Use the state with time stamp mode to measure the elapsed time between each stored sample.

Electrical characteristics

Probe inputs
• 240K ohm input impedance shunted by 10 picofarads.
• 1 nanosecond maximum skew between channels.
• Setup and hold: 2 nanosecond setup / 0 nanosecond hold.

Threshold levels
• Two independent threshold levels.
• Variable between -4.90 volts through +5.27 volts in 40 mV increments.
• TTL, CMOS, ECL levels are easily selected.

Trigger out signal
• TTL active high signal used to trigger an external device.
• Use with our ScopeLink™ Plug-In to add mixed signal analysis to the GoLogic™
Interface to PC
• USB 2.0 (also supports USB 1.1)

Power supply
• 12 volts at 2.5 amps, rated 30 watts continuous
• Handles US and European power: 120 to 240 volt; 50 - 60 Hz AC
• Weight: 6 oz. (176 grams)
• GoLogic uses no USB power. The GoLogic must be connected to the power supply before the computer will recognize the device.

Physical characteristics

Lead set
• Each wire is shielded by a twisted ground to reject noise.
• High quality, milled terminators precisely fit 0.025 inch pins.
• Color coded and numerically labeled. The color scheme matches the colors in the GoLogic™ Setup window.
• Plastic separator-blocks arrange the wires into 8-channel groups. The plastic blocks slide on the wires and can be removed if needed.

Dimensions
• Width: 3.8" (9.5 cm)
• Length: 6.3" (16 cm)
• Height: 1.2" (3 cm)
• Weight: 14 oz. (410 grams)