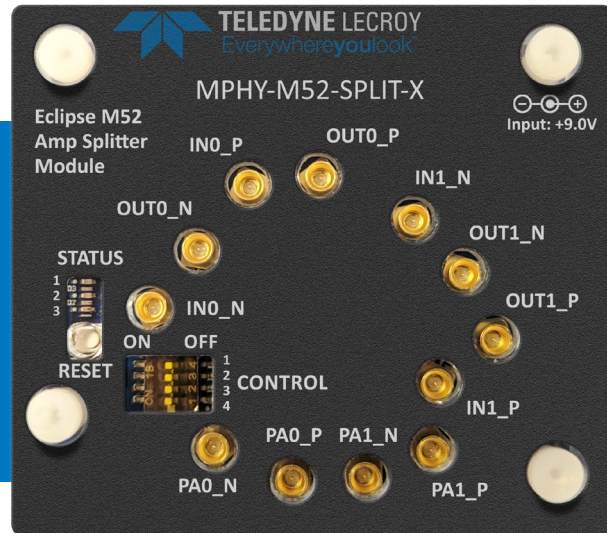


Eclipse™ M52 M-PHY HS-G5 Amplifier Splitter



Key Features

- MIPI UniPro v2.0, Universal Flash Storage (UFS) v4.0, M-PHY v5.0
- High Speed Gear 5 (HS-G5)—enabling engineers to double the potential data rate per lane to 23.32 Gigabits per second (Gbps) on one lane and 93.28 Gbps over four lanes (2 lanes in each direction)
- Supports GEAR4, GEAR3, signal rates
- Supports USF x2 Lanes
- Status Lights
- Microcontroller Modes:
 - Channel Mode
 - Memory Mode
- 66/33 Power Divide/Split
- Adjustable Amplification settings

The Eclipse M52 M-PHY Amplifier Splitter gives developers the ability to split the transmission signal between the Host and DUT to the Eclipse M52 Analyzer.

The AmpSplitter board uses a 66/33 resistive divider and provide the “66” percent of the signal to the Host/DUT path. This supplies an additional ~2 dB of signal compared to a 50/50 divider. The “33” percent of the signal is sent to the Eclipse M52. The signal to the analyzer is then amplified. The amplifier settings can be adjusted via the control switch bank (S1) on the board. Each Eclipse M52 M-PHY Amplifier Splitter board supports a single Transmit Lane (x1).

Status Lights

The Amp Splitter has one power LED and three status LEDs on the top side of the board, labeled Status in FIGURE 1.

Status lights #1 and #2 are blue lights used to indicate microcontroller modes, Status light #3 is an orange light used to indicate errors. The power LED is located near the DC jack and indicates that the board is powered.

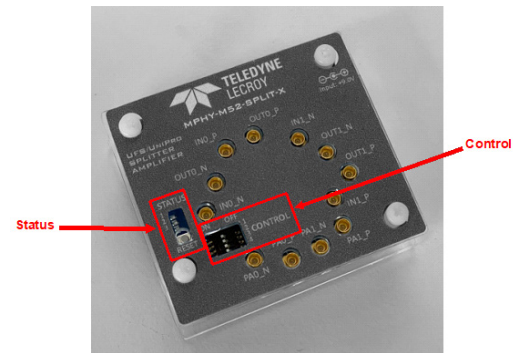


Figure 1

Power-Up

The Amp Splitter board does not have a power switch and powers up when the DC jack is inserted. When power is applied, all three status LEDs will briefly illuminate to indicate the microcontroller is running.

Errors

Status light #3 will briefly illuminate during power-up and will stay lit whenever the microcontroller encounters an error. If Status light #3 is illuminated, you must power cycle the board to clear the error state. Contact Protocol Insight if Status light #3 continues to illuminate after repeated power resets.

Microcontroller Modes

Refer to ONBOARD SWITCH SETTINGS below for more detail on the Control bank settings.

Mode	Status Lights	Channel
Memory Mode	#1 (on) #2 (on) #3 (off)	Each lane is using the control bank settings written during a previous use
Broadcast Mode	#1 (off) #2 (off) #3 (off)	Both lanes are set to the same Control bank setting.
Broadcast Mode Channel Mode – Lane 0	#1 (on) #2 (off) #3 (off)	Lane 0 is set based on the Control bank setting
Broadcast Mode Channel Mode – Lane 1	#1 (off) #2 (on) #3 (off)	Lane 1 is set based on the Control bank setting
Error	#3 (on)	If status light #3 remains lit, power cycle the board. Refer to Errors for more detail

Onboard Switch Settings

S1 is a 4-bit maintained switch bank, labeled Control in Figure 1 (first page). These four switches provide binary controls for RF settings in the main amplifier. The LSB of the 4-bit control is labeled 1 in Figure 1. 4 is the MSB. The ON side of the switch is a logic ‘1’. The table of controls is shown below.

Switch State	CONTROL (4 on switch is LSB)	CTLE Bandwidth	Mid-band Compensation	Output Differential Voltage Swing (dB)	CTLE Value (dB @ 8GHz)
0	0000	Low	Enabled	0	-0.8
1	0001	Low	Enabled	0	1.3
2	0010	Recommended	Enabled	0	-0.8
3	0011	Recommended	Enabled	0	1.3
4	0100	Recommended	Enabled	0	5.7
5	0101	Recommended	Enabled	0	7.1
6	0110	Recommended	Enabled	0	10.1
7	0111	Recommended	Enabled	0	14.4
8	1000	Recommended	Enabled	0	17.85
9	1001	Recommended	Disabled	0	1.3
10	1010	Recommended	Disabled	0	5.7
11	1011	Recommended	Disabled	0	7.1
12	1100	Recommended	Enabled	-1.6	-0.8
13	1101	Recommended	Enabled	-1.6	1.3
14	1110	Recommended	Enabled	-6	-0.8
15	1111	Recommended	Enabled	-6	1.3

For environments using two lanes (x2), two Eclipse M52 M-PHY Amplifier Splitter boards are required.

Ordering Information

Base Hardware Platform

- Eclipse M52 x1 AMP Splitter Module (includes 2 phase matched cables)
- Eclipse M52 x2 AMP Splitter bundle (includes 2 Amplifier Splitter Boards and 4 phase matched cables)

Product Code

- MPHY-M52-SPLIT-X
- MPHY-M52-X2SPLIT-B



Local sales offices are located throughout the world.
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1-800-5-LeCroy • teledynelecroy.com

