1 Overview

The SATA breakout board is designed to connect the high speed lines from a male SATA connector to SMA jacks. Each line is length matched with controlled impedances and uses FR-408 high performance dielectric.

2 Features

- SATA I/II/III compliant
- 1.5 Gbps, 3.0 Gbps, and 6.0 Gbps signal capable: uses FR-408 Dielectric
- SMA connections to length matched high speed lines
- Rugged through hole right angle SMA connectors
- Locking, shrouded SATA male connector
- RoHS compliant

Table of Contents

SATA Breakout Board

3 Electrical Description

3.1 High Speed IO

The SATA high speed IO (A+/- and B+/-) are 50 Ohm single ended lines. The high speed dielectric used (Isola FR-408) ensures data rate compatibility for data rates greater than 6.0 Gbps (SATA I/II/III). Off board connections are 50 ohm SMA.

Each IO line is length matched to 1.995" +/-0.005" and the attenuation is calculated to be .49 dB at 3.0 GHz (6 Gbps SATA III). Both the SATA and SMA connectors will add approximately .5 dB of loss, bringing the loss introduced by the SATA2SMA board to 1.5 dB.

3.2 Functional Overview

A block diagram of the electrical functions of the SATA Breakout is given in Figure 1. Connectors and are described in section 4.
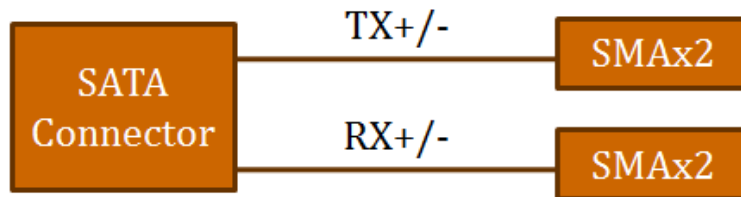

Figure 1 - SATA Breakout Block Diagram

4   Physical Description

4.1   Board Size & Locations

The SATA Breakout board is a .063" thick PCB measuring 1.910"x2.650". It has four .120" mounting holes with dimensions as shown in Figure 2 and Figure 3. Rubber feet come applied below mounting holes on rear of board by default, however they may be removed with minor pressure if another mounting style is more convenient.
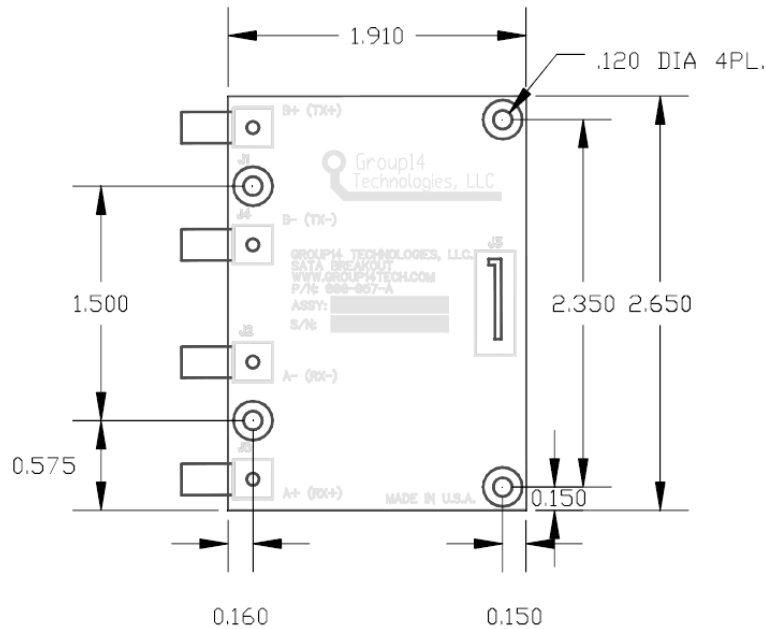

Figure 2 – SATA Breakout Physical Dimensions (Dimensions are in Inches)
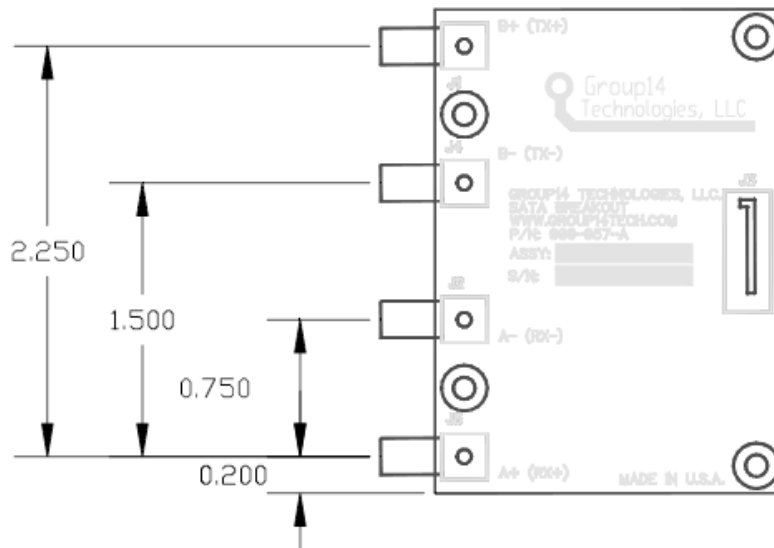

Figure 3 - SATA Breakout SMA Connector Locations (Dimensions are in Inches)

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4.2 Board Connections

Connector	Pin	Type	Description
J1	SIG	SMA Female	B-
J2	SIG	SMA Female	B+
J3	SIG	SMA Female	A+
J4	SIG	SMA Female	A-
J5	1	SATA MALE	GND
J5	2		A+ (Host TX+)
J5	3		A- (Host TX-)
J5	4		GND
J5	5		B- (Host RX-)
J5	6		B+ (Host RX+)
J5	7		GND

5   Ordering Information

- SATA Breakout part number: *SATA2SMA*
- Sales phone: (937) 985-4140
- Sales email: contactus@group14tech.com
- Website: http://www.group14tech.com

6   Disclaimer & Warranty

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All Group14 Technologies, LLC products carry a one year warranty from date of purchase. Product support will be provided for one year from date of purchase with further support provided on an "as available" basis.

7   Revision History

Date	Revision	Description
2014-01-23	DS103.0	Initial release