

## Channel and Distance Validation

Date Completed: \_\_\_\_\_

Performed by: \_\_\_\_\_

**Tested Specifications:**

Test #	Engineering Specification	Description	Pass Requirement
T4	ES1	Mass of Printed Circuit Board	<.3 kg
T7	ES14	Width of Printed Circuit Board	9 +/- .127 cm

**Revision History:**

Revision	Description	Date
1	Document Created	12/9/2010

**Equipment Needed:**

Name of Equipment	Accuracy
6x Communication Boards	-
6x Computers/Laptops	-
100m Tape Measure or Location with Known Distances (ex. Field House)	10cm

**Resources Needed:**

Where	When
Large indoor space with > 100m line of sight	-

**Test:**

Step Number	Check Off	Procedure
1		Connect the six communication boards to a respected computer. Allow for line of sight between all six of the boards' antennas with a maximum distance between antennas less than 10m.
2		Assign three boards for transmission on three separate channels.
3		Assign three boards for receiving on the three previously designated channels.
4		Continuously transmit data across the three links and measure BER on the receive channels. Record average BER in the Measured Results Table for the three separate channels.
5		Stop the transmission of data and disconnect all boards.
6		Separate two communication boards a distance of 100m and connect each to a respected computer.
7		Assign one board for transmission and one board for receiving on the same channel.
8		Continuously transmit data and record the average BER in the Measured Results Table.

**Measured Results Table:**

Variable Name	Recorded Value	Passable Range	Pass/Fail
BER - 1		< 0.12	
BER - 2		< 0.12	
BER - 3		< 0.12	
BER at 100 m		< 0.12	

**Comments and Calculations:**

**Sign off on section completion:** \_\_\_\_\_

**Date of Sign Off:** \_\_\_\_\_