

# DHAN-Based Printed Antenna Performance

---

## Abstract

This document describes the dimensions and the results of simulation, measurement and radiation pattern testing for a DHAN-based printed antenna.

## Table of Contents

1.	Overview .....	2
2.	Measurements and Results .....	3
2.1	Antenna Dimensions.....	3
2.2	Radiation Pattern Visualization .....	3
2.3	Simulation.....	4
2.4	Radiation Pattern .....	4

## 1. Overview

This document describes the mechanical requirements for a DHAN-based printed antenna, and presents simulation, measurement and radiation pattern results.

Since antenna performance improves as the GND reference area increases, performance is expected to improve after the antenna is embedded in the larger application/sensor PCB.

Since antenna performance is affected by the final application/sensor casing material (i.e. plastic), final antenna matching should be done after the module/antenna is enclosed in its final casing.

Contact DSP Group [SupportEU@dspg.com](mailto:SupportEU@dspg.com) for the DHAN printed antenna database (layout & Gerber).

## 2. Measurements and Results

### 2.1 Antenna Dimensions

See Figure 2-1 for top and bottom dimensions.

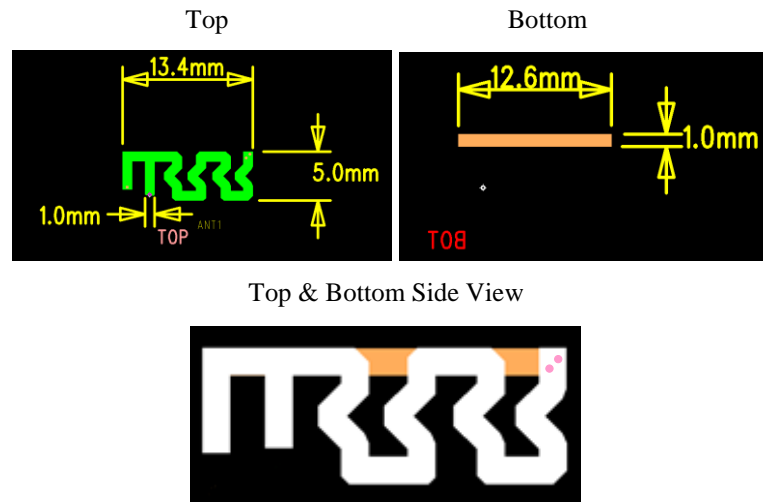


Figure 2-1: Antenna Dimensions

### 2.2 Radiation Pattern Visualization

See the three diagrams in Figure 2-2.

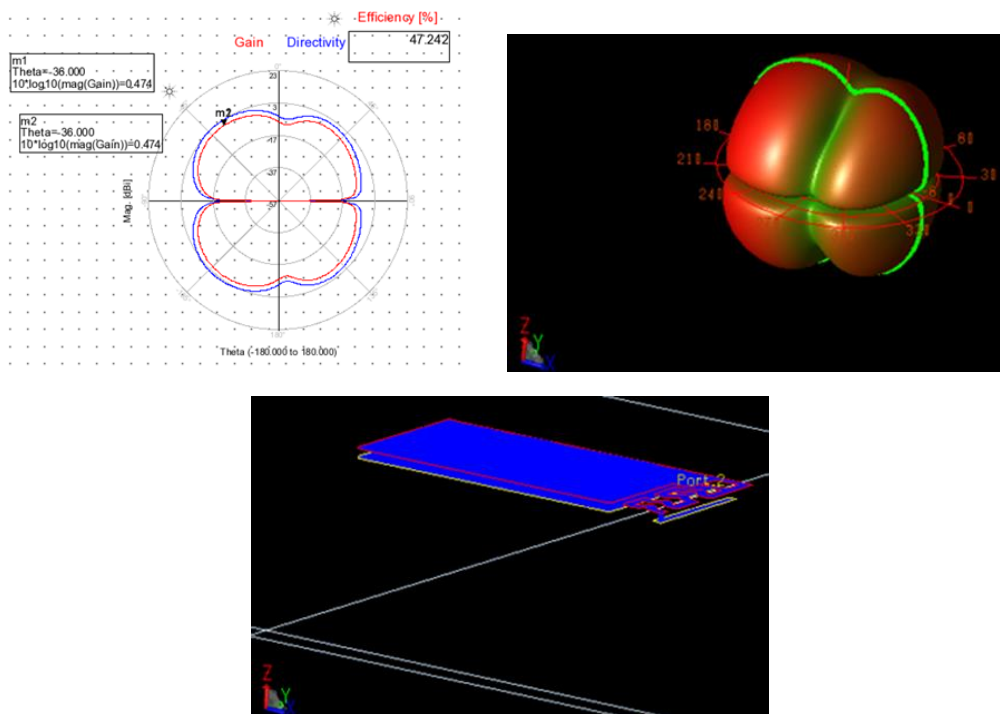


Figure 2-2: Radiation Pattern

## 2.3 Simulation

See the S11 parameters for simulation and measurement results in Figure 2-3.

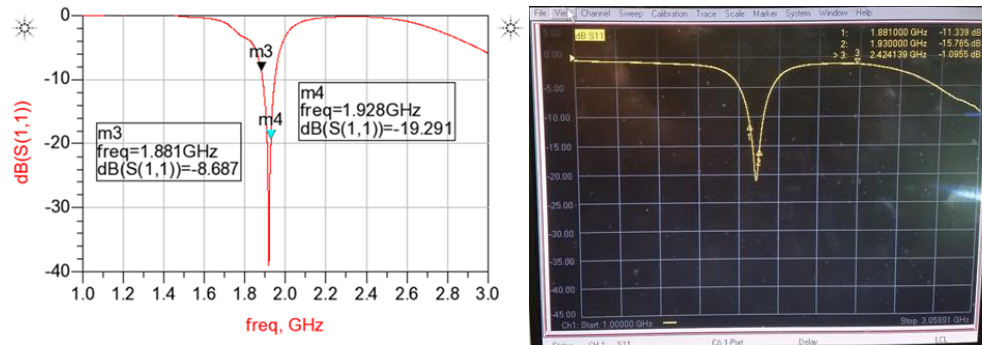


Figure 2-3: Simulation Results

## 2.4 Radiation Pattern

See Figure 2-4 for DHAN radiation pattern measurements.

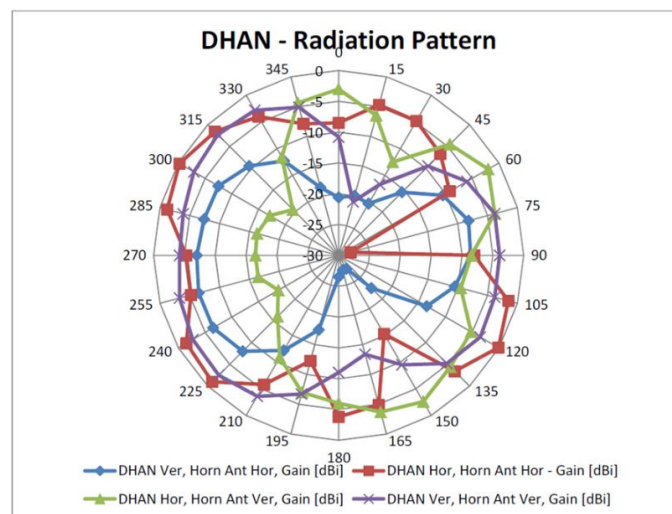


Figure 2-4: Radiation Pattern Measurements

This document is provided by DSP Group, Inc. and/or one or more of its subsidiaries (“DSP Group”). All information and data contained in this document is for informational purposes only, without any commitment on the part of DSP Group. DSP Group shall not be liable, in any event, for any claims for damages or any other remedy in any jurisdiction whatsoever, and shall not assume responsibility for patent infringements or other rights to third parties arising out of or in connection with this document. Further, DSP Group reserves the right to revise this publication and to make changes to its content, at any time, without obligation to notify any person or entity of such revision changes. These materials are copyrighted and any unauthorized use of these materials may violate copyright, trademark, and other laws. No part of this publication may be reproduced, photocopied, stored on a retrieval system, or transmitted without the express written consent of DSP Group. Any new issue of this document invalidates previous issues.

DSP Group reserves the right to revise this publication and to make changes to its content, at any time, without obligation to notify any person or entity of such revision changes.

© 2016 DSP Group. All rights reserved.

DSP Group Headquarters: 161 S San Antonio Rd, Suite 10, Los Altos CA 94022, Tel: (408)986-4300, Fax: (408)986-4323