Anten'it Microwave Research Kit for Universities

ACADEMIC VERSION OF ANTEN'IT MICROWAVE DESIGN AND PROTOTYPING KIT FOR MICROWAVE ENGINEERS

Anten'it Microwave Research Kit is designed for research purposes, graduation projects and term projects. Researchers or students can design their novel microwave components or systems by mounting the blocks into each other. Microwave blocks are in brick-form which makes them re-usable.

There are metal cells, 3 different kinds of dielectric cells with different dielectric constants, electromagnetic absorbers, ground planes, connectors, adaptors, cables and removers in this kit.

You can either model a component via a computer electromagnetics (CEM) software program and build it with the reusable blocks or directly design it in front of a network analyzer. This allows you to change the microwave component parameters by using your hands. How Anten'it kits give similar results with the simulation tools is described at the second page of this document.

RE-USABLE BLOCKS FOR RESEARCH, GRADUATION AND TERM PROJECTS

A typical microwave component design needs to prototype the design for more than once. The fabrication of each prototype creates a high cost and long design duration.

ANTEN'IT SAVES YOU SPENDING YOUR BUDGET ON FABRICATION AND MATERIAL COSTS

Most universities don't have fabrication infrastructures. Reusable blocks save universities to spend their budget on expensive machining infrastructures and materials. Even if you have a PCB or machining infrastructure, re-usable blocks save you from spending your budget on material costs.

DATASHEET BOOKLET AND ANTENNA BUILDING INSTRUCTIONS

There are many microwave components included in the datasheet booklet. You can select the component which is appropriate for your requirements from the datasheet booklet. Building steps of each component in the datasheet booklet take part in the microwave building instructions. You can follow the steps, build the component and use it. After you terminate the project, you can dismount the blocks. They are ready to build another antenna in another project.

Anten'it can be ordered via distributors in www.antenit.com or sales@antenit.com
Anten'it is a patent pending product of Antenom Antenna Technologies

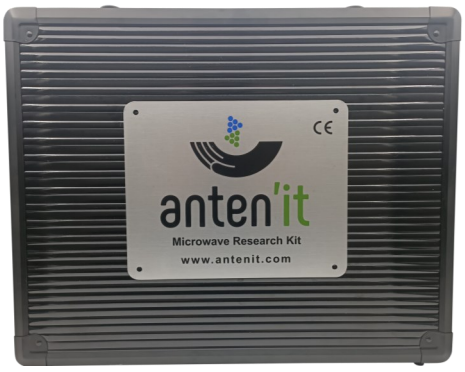
Two Typical Applications of Anten'it Microwave Research Kit

1– Design your novel Microwave components

- Design your microwave component via analytical calculations or simulation tools
- Build it with Anten'it Microwave Research Kit
- Iterate your design by adding or removing blocks
- Dismount the blocks and re-use them for another project

2– Build the Microwave Components by following the steps in Microwave Building Instructions

- Select the microwave component for your application
- Check Microwave Datasheet Booklet to find the appropriate component for your application
- Check Microwave Building Instructions and build the component by following the steps
- Use the microwave component
- Dismount the blocks and re-use them for another microwave component requirement



Theoretical Background Behind Anten'it Kits

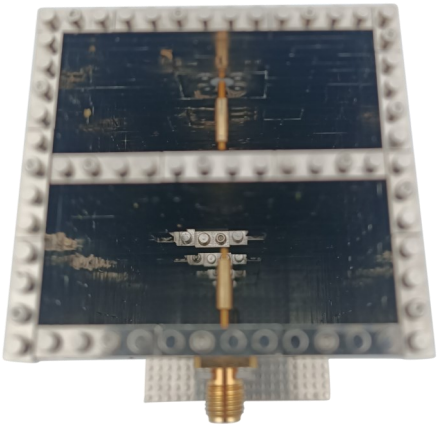
HARDWARE MESH CELLS

Electromagnetic simulation programs generally include CAD interfaces. When the designers draw a solid structure in the CAD interface, simulation programs discretize the solid structure into small pieces called "mesh cells". Maxwell equations are calculated within each mesh cell by using numerical methods such as method of moments (MOM), finite-difference time-domain (FDTD), finite element method (FEM) etc. Each numerical method uses different mesh cell shapes.

FDTD type of simulation programs use cubic mesh cells. In order to get accurate results, the mesh cell dimensions are selected lower than wavelength/10.

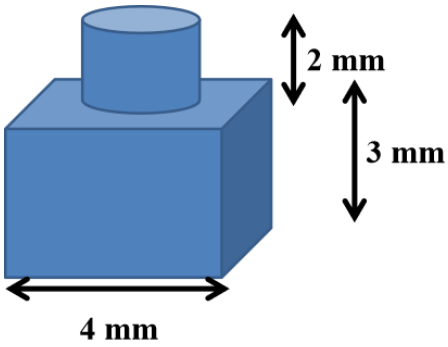
Anten'it Microwave Kits use brick-type hardware cells. Brick types of mesh cells are very similar to cubic shapes. There are two resolutions in this kit. One of them is 4 mm (length) X 4 mm (width) X 3 mm (height) and the other one is 1.5 mm height with the same length and width. The largest dimension 4 mm corresponds to λ/12.5 at 6 GHz. 6 GHz is the highest frequency of Anten'it kits.

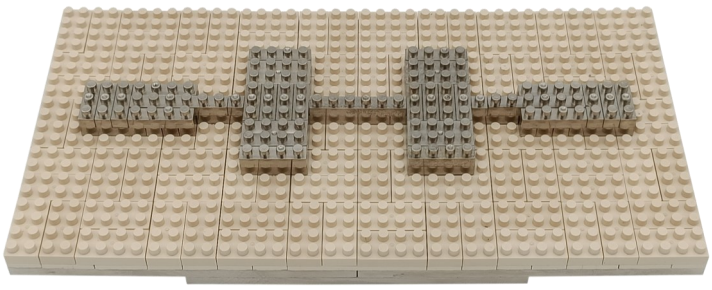
The hardware mesh cells provide students and researchers to design their passive microwave components directly in front of a network analyzer. They can start their design with calculations and iterate by adding or removing cells (bricks).



CONTENT OF MICROWAVE RESEARCH KIT

1. Metal Blocks
2. Dielectric Blocks with 3 different dielectric constants and colours
3. Ground Planes
4. Connectors
5. Electromagnetic Absorber Blocks
6. Cables
7. Adapters
8. 50 ohm Terminations
9. Removers
10. Case
11. Microwave Datasheet Booklet & Microwave Component Building Instructions
12. Anten'it User Manual





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