F&MM
Fragrant Mountain Microwave

Application Note

Highly Efficient Measurement

FM81 Serial Product's Technical Highlight

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Expand the Global Horizon of Innovation Invent the Future of Microwave Technology

Part 1 – Efficiency is Function of Accuracy and System Complexity

Fragrant Mountain Microwave (F&MM) understands the driven force for higher efficiency in many R&D and manufacture testing environment. Before a product enters production, higher efficiency stands for more prototyping cycles and ultimately better qualities. Whether the design achieves sufficient margins in specifications could greatly impact the smoothness during pilot and massive production cycles. The following are a few important aspects but not limited, we have incorporated in our product development:

- Provide efficient toolkits for parametric configurations to achieve optimal testing results;
- Provide fool-proof setup process guided by product testing procedures
- Provide single application platform that unified by user-friendly functionalities
- Provide sufficiency GUI interface and design freedoms for R&D engineers and research scientists
- Provide One-Key solution for production line environments and Simple Click to Run functionalities
- Provide Turn-key and sustainable service based on customer' s current and future needs

To illustrate, Fig. 1 is a nearfield configuration window that automatically solves system parameters based on types of measurement and device under test information. Fig. 2 shows our proprietary software with typical nearfield testing work-flow tree, one can simply follow the tree to finish all necessary testing configurations with guided default parameters. Fig. 3 indicates an advanced software toolkits that automatically identified the maximal radiation angular directions and create post processing coordinate accordingly. This is an extremely important technology to achieve accurate gain and high XPD measurement. Fig. 4 shows a robotic controlled laser accessory used in coordinate calibration of a low frequency parabolic antennas, which is part of the turn-key measurement process.

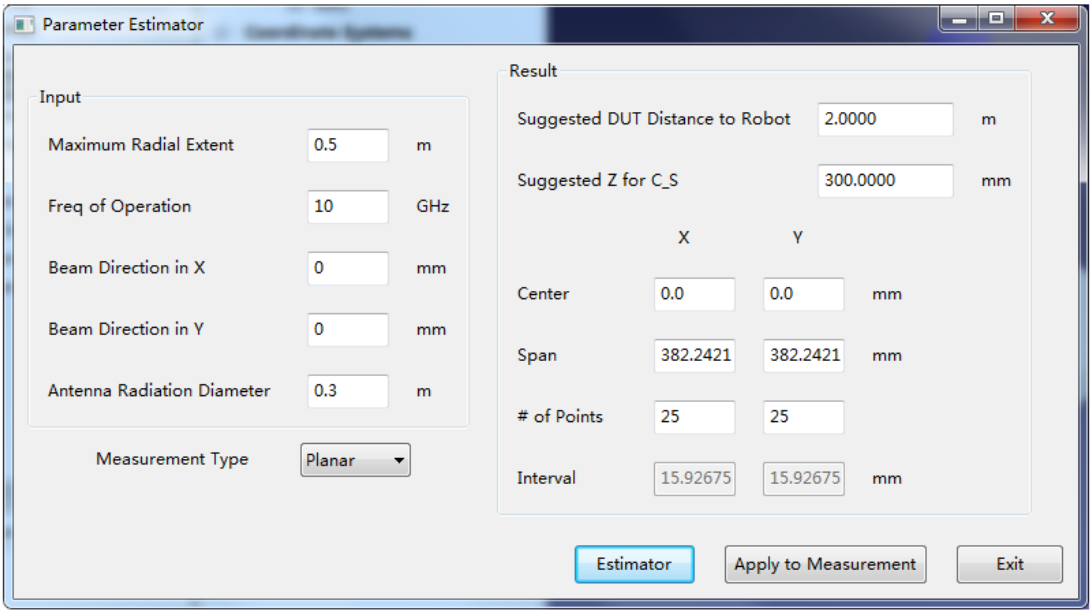

Fig. 1. Nearfield Configuration Window that Automatically Solves System Parameters

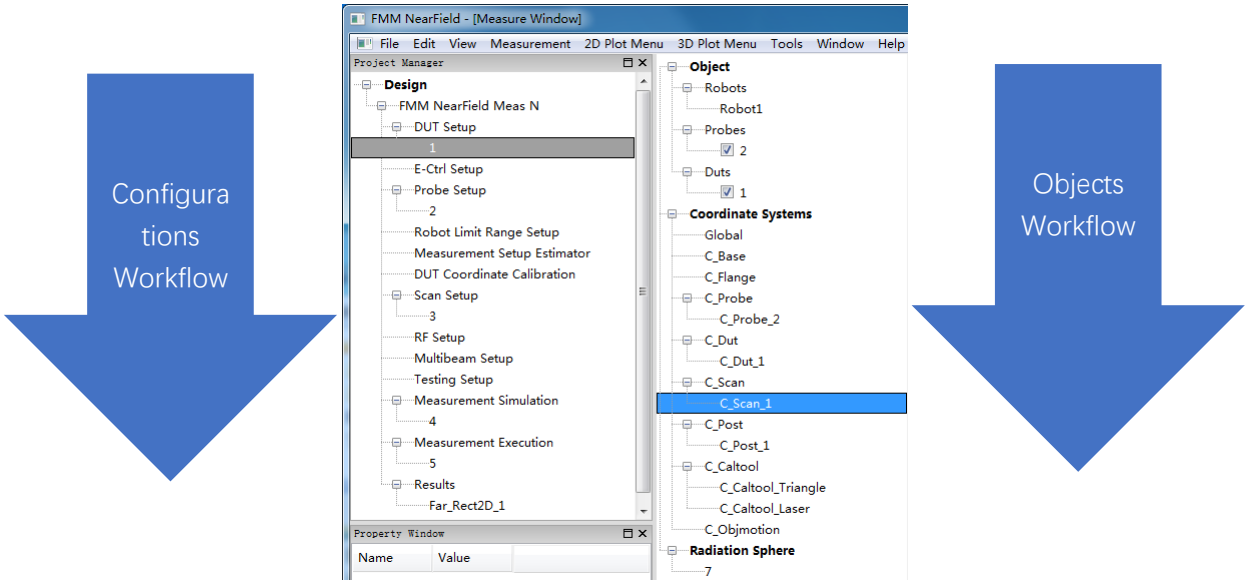

Fig. 2. Proprietary Software with Typical Nearfield Testing Workflow Tree

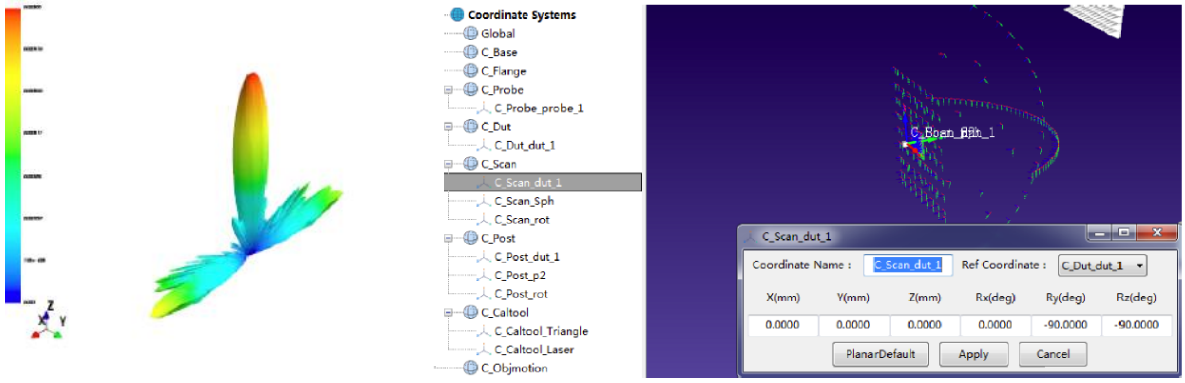

Fig. 3. Software Toolkit that Automatically Identifies the Maximal Radiation Angular Direction

Fig. 4. Robotic Controlled Laser Toolkit for Coordinate Calibration

Part 2 – Efficiency is Function of Proper Tools Selection

There was an old Chinese saying from Confucius: "Good Tools are Prerequisite to the Successful Execution of a Job.' When craftsman makes a tools who has to consider the robustness – it shall be powerfully built for the jobs it meant for; the reliability – it shall be trustworthy with specifications can be depended on; the sustainability – it shall last long and be ease of maintenance and upgradable; the resiliency – it shall possess great capacity to recover quickly from difficulties. For those reasons, commercial tools are mostly made according to standard, with great flexibility to be adapted for different tasks. Hence our typical measurement system consists of a few standard units and large amount of options and accessories. To balance between cost and functionalities, selecting the right instrument type with proper optional toolkits in both hardware and software, by all means, is a technical job, which determines the outcomes and measurement efficiency. Guidelines for proper tool selection include but not limited to:

- Break down your requirements into quantitative and functionality two parts of specifications;
- Consider what are present and future requirements to reduce the investment;
- Consult with both your R&D and Production departments for their different needs;
- Send your request to vendors and request for product proposals;
- Evaluate proposal from vendors and do specification and assessment planning;
- Draft proper delivery and assessment plans and make sure each spec has its proof data record.

Let us take system safety for example, one may purchase a standard FM81 testing system for its laboratory initially without anechoic chamber. However, when customer incorporated its chamber then collision become a great concerns. To solve this problem, one can simply upgrade the system with software collision avoidance feature, as shown in Fig. 5, which save customer's time to seek alternative solutions or purchase other hardware tools.

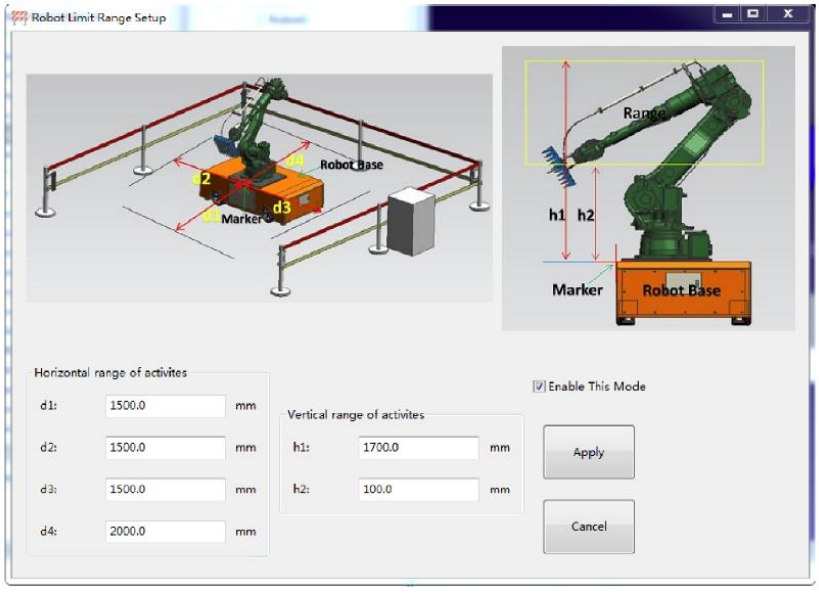

Fig. 4. Optional Function for Collision Avoidance Feature