

## INVITED TALK

# Design of Matching Networks and Microwave Amplifiers Employing the Unified Real Frequency Technique

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### **Abstract –**

In this talk, the Unified Real Frequency Technique (URFT) to design matching networks and microwave amplifiers is introduced. The prime issue is to construct a lossless matching network under complex impedance terminations. This problem is called the double matching problem (DM). If the matching problem is between a resistive and a complex impedance termination, it is called a single matching (SM) problem. If both terminations are resistive, then, one faces a filter problem. In essence, design of a single stage microwave amplifier requires designing front-end [F] and back-end [B] matching networks in a sequential manner. Likewise, in addition to [F] and [B], design of a multistage microwave amplifier requires the design of interstage matching networks [ $I_j$ ] consecutively between active devices. At the end, several examples to demonstrate the utilization of the Unified Real Frequency Technique including “Design of a 20 MHz-100 MHz antenna matching network for military applications” will be presented.

### **Speaker:**



Education: BSc. Technical University of Istanbul (Feb. 1974), MSc. Stevens Institute of Technology (SIT), Hoboken, N.J. USA (1977), Ph.D. Cornell University, Ithaca, N.Y., USA (Jan. 1982).

**Professional Posts:** Radio Corporation of America-General Sarnoff Research Center, Princeton, NJ, USA, Professors at Istanbul University, Ruhr University, Germany, Tokyo Institute of Technology, Japan, Wuhan Technology University (PR of China), Founding President of Isik University, Chief Consultant of Prime Ministry Office of Turkey, Consultant to ASELSAN Military Industries of Turkey, GTE of USA, Motorola Advance Solutions, Penang Island, Malaysia.

**Awards:** Turkish Young Scientist Award of TUBITAK (1986), Technology Award of TUBITAK (1987), Alexander Von Humboldt Research Award (1987), New York Academy of Science (1994), Man of the Year in Science and Technology, Cambridge Biography Center (1998).

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