

News release

Wallingford, CT, September, 2012
For immediate release

Times Microwave Systems

358 Hall Avenue, Wallingford, CT 06492
T: 203 949 8400, F: 203 949 8423
www.timesmicrowave.com

Leading the Way in Coaxial Technology

Pat Hindle, Technical Editor, Microwave Journal
September 17, 2012

Interview with Pete Page – General Manager of Times Microwave Systems

MWJ: *Times Microwave Systems, an Amphenol Company, has been a recognized leader in the design and manufacture of RF and microwave coaxial cables, connectors and cable assemblies for many years. How does Times continue to maintain its industry leadership?*

PP: The key to our long-term success is focusing on innovative solutions for our customers. Since its founding more than six decades ago, Times has focused solely on interconnection technology and employed three basic principles in running the business. First, we listen to our customers since above all else solving customer problems is our most important job. Second, Times is committed to developing new and innovative products which add customer value. As such, Times is committed to investing in the best engineering talent and the best production equipment as well as developing and using innovative materials. Third, our large staff of application-oriented field sales engineers understands our customers' requirements, often partnering with our customers to determine the exact product to solve their problem. In cases in which we do not already offer the best product for our customers, we are committed to developing the proper solution. Times is uniquely situated to develop new solutions since our broad expertise includes design and production of cables, connectors and assemblies, unlike most of our competitors who specialize in only one technology.

MWJ: *What are some recent examples of Times' engineered solutions?*

PP: Several of our customers were having performance issues with their phased array antenna systems which utilized microwave cables with a PTFE dielectric, a material known to have inherent issues with phase change over temperature. In response to our customers' needs, Times developed a new dielectric material to address this issue. Our PhaseTrack® product line is a game changing development in that PhaseTrack eliminates the issues associated with phase change over temperature. PhaseTrack addresses next generation requirements for improving the accuracy of phased array antenna systems.

With jet fuel at a premium, Times also pioneered the use of light weight materials for both cables and connectors thus reducing completed cable assembly weights by up to 30%. These weight-saving designs have been further enhanced by utilizing new high density multi-port connector designs. In addition, we incorporated active and passive devices in order to achieve reduced attenuation and balanced electrical paths. All of these designs have proved to have superior performance and reliability under conditions of stress in hostile airborne environments.

News release

Wallingford, CT, September, 2012
For immediate release

Times Microwave Systems

358 Hall Avenue, Wallingford, CT 06492
T: 203 949 8400, F: 203 949 8423
www.timesmicrowave.com

Another recent example of Times' engineered solutions is a line of rugged low PIM test cables for wireless infrastructure applications. These assemblies provide reliable cost-effective real-life performance in the field.

MWJ: *Tell us a little about Times' background in the defense industry.*

PP: Times has been at the forefront of developing RF cable technology for the defense industry since the 1950's. Times assisted in the evolution of the MIL-C-17 Specification for Radio Frequency Coaxial Cables and today continues to hold more MIL-C-17 QPL's (Qualified Product Listings) than any other manufacturer. Recently, Times supported the US Navy with over 30 versions of Low Loss and Low Smoke cables. Times also assisted the US Navy in developing the MIL-T-81490 Transmission Line Specification which ensures electronic warfare transmission lines perform in harsh military airborne environments. The US Air Force released MIL-C-87104, a similar specification, and Times is qualified to supply microwave transmission lines that meet MIL-T-81490 and MIL-C-87104 requirements. As a result of our continuing commitment to innovation, Times products are integral to the performance of many leading edge defense technologies.

In addition, Times' product quality and customer service have been key in developing valued long-term customer relationships. Recent successes include our selection by Lockheed Martin to supply the RF/microwave assemblies for the F-35 Joint Strike Fighter and by Boeing to supply the microwave cables for the P-8. Over the last several years, Times was recognized with several prestigious awards including "Boeing Supplier of the Year in Avionics" and the "Lockheed Martin Award of Excellence" for the F-35 program.

MWJ: *Can you tell us about a few of Times' recent product developments?*

PP: One consistent trend in all RF markets is the drive for smaller, lighter, higher density interconnects. Our high density multiport interface technology uses MMP and M8 interfaces to support the need for increased connection quantity in ever-decreasing physical spaces. These products perform up to 40 GHz and incorporate maintainability features for easy insertion and removal. They are supplied in various industry standard or customizable connector shell configurations.

As the cable assembly market for test and measurement products continues to expand, Times has been at the forefront with high reliability products for every application. The Silverline series support a wide range of lab test and field test environments, and include specialized products like our unique SilverLine TuffGrip cables for site testing and Silverline-VNA for precision test applications up to 40 GHz. Industrial, airframe and naval applications utilize our low-loss Miltech XR and TestMate cable assemblies. Benefits of this product line include internal ruggedization, extreme connector retention strength and a complete line of replaceable connector interfaces.

News release

Wallingford, CT, September, 2012
For immediate release

Times Microwave Systems

358 Hall Avenue, Wallingford, CT 06492
T: 203 949 8400, F: 203 949 8423
www.timesmicrowave.com

Our unique LMR-SW low PIM cables incorporate a smooth-wall aluminum shield which is completely seamless, thus eliminating any possibility of seam failure or pinholes. The connector preparation and attachment system allows field assembly with excellent PIM performance.

Two years ago, Times entered the RF lightning protection market with the Times-Protect product line, bringing some of the most advanced and cost-effective protection products in the industry to market.

MWJ: *How is Times able to address such a broad range of customer requirements?*

PP: Times utilizes seven different dielectric materials, five different basic low loss outer conductor structures and many extruded or armored outer jacket options in order to provide our customers with the entire range of environmental, mechanical and electrical RF solutions. Many of Times' broadband microwave cables employ an innovative outer conductor structure that provides the lowest loss available when compared to other cables of the same diameter. All of these products are designed for stable long life performance. In addition, Times has developed a full range of connectors for all of our cable products thus allowing a complete cable assembly solution. By designing all of the components, Times is able to provide the industry's strongest cable to connector terminations to guarantee reliability.

As an example, cable assemblies used for the protection of ground vehicles (IED) require low loss, high shielding, ruggedization/external armor, very high connector retention strength and field maintainability. Add to this list, special jackets, including NBC compliant materials, and you can understand why Time's broad range of materials, technologies and products is essential for providing the best solution.

MWJ: *How is Times involved in addressing the capacity problems being encountered by the wireless carriers with the proliferation of so many wireless devices?*

PP: Times provides the distributed antenna systems (DAS) market with a variety of products including our broadband LMR cables, both non-plenum and plenum rated, low PIM cable assemblies and lightning protection products covering applications up to 6 GHz. These products are suitable for both indoor and outdoor installation in order to help enhance signal coverage where the RF power is attenuated by the surrounding building structure. The wireless products offered by Times allow engineers to optimize these networks.

MWJ: *How does Times address the global marketplace?*

PP: Times has been manufacturing products at the Wallingford, Connecticut headquarters for more than sixty years. Nine years ago we opened a new facility in Shanghai, China primarily to focus on commercial products for the Pacific Rim market. More recently we opened a facility in West Palm Beach, Florida to expand our domestic capacity to supply high performance interconnects.

News release

Wallingford, CT, September, 2012

For immediate release

Times Microwave Systems

358 Hall Avenue, Wallingford, CT 06492

T: 203 949 8400, F: 203 949 8423

www.timesmicrowave.com

MWJ: *In the face of economic uncertainty both domestically and globally, what challenges does Times foresee over the next couple of years?*

PP: No doubt there will be continued global economic and political uncertainty, therefore we must focus on the challenges within our control. We must maintain the ability to adapt quickly to changing customer requirements as well as to minimize the impact of commodity pricing including copper, silver and gold. In addition, our dedication to continuous improvement in material and product development will result in improved efficiencies and position us to meet future challenges.

MWJ: *How does Times expect to grow over the next few years?*

PP: We expect to see continued growth in our wireless, industrial, transportation, aerospace and test market segments. Current demand remains strong for products requiring our specialized technologies including low-loss, phase stable, ruggedized and plenum rated products. As always, Times continues to collaborate with customers on new product designs which will expand our future product offerings. This approach will keep us at the forefront of the microwave industry allowing us to add value for our customers for years to come.