

Trio of Antenna Circuit Materials at Mobile Antenna Systems 2012

Rogers Corporation will be displaying three of their leading high-performance circuit materials for mobile and fixed-site antennas at the upcoming Mobile Antenna Systems 2012 conference and exhibition. This key event for designers and specifiers of antennas for a wide range of fixed and mobile applications is scheduled for September 18-19, 2012 at the Hyatt Denver Tech Center (Denver, CO). Mobile Antenna Systems 2012 (www.antennasonline.com [1]) offers a diversified technical program, with scheduled presentations on multiple-input, multiple-output (MIMO) techniques, antenna arrays, near-field antenna testing, body-worn antennas, antennas for 4G cellular systems and plasma antennas for mobile communications.

Mobile Antenna Systems 2012 also features an exhibition floor with some of the leading suppliers of antennas and antenna materials, including Rogers Corporation (www.rogerscorp.com [2]) at Booth #35. Rogers will be highlighting some of its premium circuit materials for antennas, including RO4500™, RO4730™ LoPro™, and RT/duroid® 5880LZ laminates. The materials are engineered to address modern antenna requirements that include small size, light weight, high gain, and high power-handling capabilities.

For example, Rogers RO4500 and RO4730 LoPro materials are both compatible with standard FR-4 PCB fabrication methods and high-temperature lead-free processing, to minimize cost and complexity in manufacturing. RO4500 antenna-grade laminates are ceramic-filled, glass-reinforced hydrocarbon materials available in several dielectric constant grades between 3.3 and 3.5 in the z-direction at 10 GHz. They provide excellent dimensional stability, with a coefficient of thermal expansion (CTE) in the x and y directions that is closely matched to that of copper. RO4500 circuit materials also feature a high thermal conductivity of 0.6 W/m/K for excellent power-handling capability.

Similarly, Rogers RO4730 LoPro circuit laminates, with their low-profile copper conductor foils, are compatible with FR-4 and lead-free processing methods, and offer the stable thermo-mechanical and electrical properties ideally suited for antennas. These properties include low relative dielectric constant of 3.0 and loss tangent of 0.0023 at 2.5 GHz, along with impressive passive intermodulation (PIM) performance of -154 dBc minimum. RO4730 LoPro circuit materials also exhibit CTEs in the x- and y-directions closely matched to copper, resulting in PCB antennas with minimal dimensional stress over wide temperature ranges. In addition, they feature a low z-axis CTE of about 40 ppm/°C for reliable plated-through holes (PTHs). RO4730 LoPro laminates support long tool lifetimes for reduced fabrication costs in large-volume, production environments.

Rogers RT/duroid 5880LZ PTFE-based composites incorporate a unique filler that

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Published on Wireless Design & Development (<http://www.wirelessdesignmag.com>)

results in a low-density, lightweight material well suited for airborne and satellite communications antennas, point-to-point digital radio antennas, and lightweight feed networks. RT/duroid 5880LZ circuit materials combine a low relative dielectric constant of 1.96 and low dissipation factor of typically 0.0019, both in the z-axis at 10 GHz, for usable performance to Ku-band frequencies and beyond. These laminates can be easily cut, sheared, and machined, and boast a low density of 1.4 g/cm³ for applications that require extremely low-weight antennas. For more on Rogers' circuit materials for antennas, visit the website at www.rogerscorp.com [2], or say "hello" to Rogers' staff at Booth #35 at Mobile Antenna Systems 2012.

September 05, 2012

Source URL (retrieved on 01/26/2015 - 4:20pm):

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[1] <http://www.antennasonline.com>

[2] <http://www.rogerscorp.com>