



For Immediate Release

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## PIM Cable Assemblies Offer -181 dBc of Intermodulation

September 29, 2011—Ipswich, MA—San-tron, Inc., a designer and manufacturer of RF coaxial connectors and cable assemblies, has announced a new series of PIM cable assemblies. These assemblies feature intermodulation performance as low as -181 dBc with an eSeries 7/16 connector terminated on TFlex-402 cable. Typical performance across the lineup of assemblies terminated with eSMA and eSeries Type N's is -162 dBc. The eSMA cable assemblies perform DC-20 GHz and the eSeries Type N cable assemblies perform DC-18 GHz. These assemblies are phase and attenuation stable, provide excellent shielding, support UL/NEC Plenum class CMP, are corrosion resistant, and are low in weight and highly flexible.



The key component in San-tron PIM cable assemblies are the latest series of connectors recently introduced by San-tron. eSeries connectors, which includes SMA (trademarked as eSMA) Type N, TNC, and 7/16 styles offer evolved cable/connector transitions. The repeatability of these transitions from the cable into the connector is key to the consistent high performance of these cable assemblies. The center contact is a heat treated BeCu socket contact that accepts the cable's silver plated conductor as a solder free connection. Therefore, this element of the transition is controlled to machined tolerances; which are much tighter than the variations seen by cable assembly personnel and solder joints. The elimination of this center conductor solder joint also precludes the changes that occur in dielectric densities that would affect changes in the dielectric constant of the cable. This is a major benefit since these changes in  $\epsilon_r$  would occur along the center conductor where the  $R^2$  relationship is strongest. Furthermore, the connector bodies contain an internal stop to locate the cable position into the connector. This further influences the repeatability of RF performance for these cable assemblies.

Ruggedness is the other characteristic that was designed into these cable assemblies. Especially for brass SMA's there is a historical failure mode of coupling nuts "walking off the job." With each mating of a brass SMA the sharp corners that secure the coupling nut are coined until finally the coupling nut "walks" off of the retaining ring. By implementing new geometric retaining elements this failure mode is permanently remediated.

For both TFLEX and conformable cables the solder wick line within the braid is a traditional failure point. The solder joint establishes a "solid" section of semi-rigid cable and precisely at the wick line is the introduction of highly flexible cable. This extreme transition from solid to flexible establishes a fulcrum at which it is very easy to fatigue the cable into breakage; not so unlike using an etch line to break a glass tube. The extended ferrule that is crimped onto the body provides longitudinal protection out past this wick line. Then for added protection dual wall heat shrink is positioned within the saddle of this crimp ferrule and further extends the strain relief from this wick line offering high reliability in applications that involve repeated flexure.

To facilitate strong PIM performance these connector bodies are plated with white bronze Albaloy. The Albaloy plating provides a robust surface that easily accepts the braid solder joint and supports corrosion resistance per salt fog testing. The eSMA center contacts are BeCu; they are plated .000030 gold over a copper strike providing great RF performance, corrosion resistance, and controls over porosity (made in the USA). The eSeries N and

7/16 center contacts are plated .000200 silver over a copper strike which contains cost versus gold, and also provides great RF performance and corrosion resistance. Additional details are available at [www.santron.com](http://www.santron.com)

**About San-tron, Inc.**

*Established in 1955, San-tron designs and manufactures RF coaxial connectors and cable assemblies in a variety of standard and custom configurations from SMA through LC style. With headquarters, engineering and manufacturing in Ipswich, Massachusetts, and a wholly-owned, off-shore facility in Suzhou, China, San-tron offers a balanced approach to meeting market demands for high quality and competitive pricing.*

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