SELF-LOCK CONNECTORS

Designed to Reduce Installation Time

SMA 2.9 Self-Lock

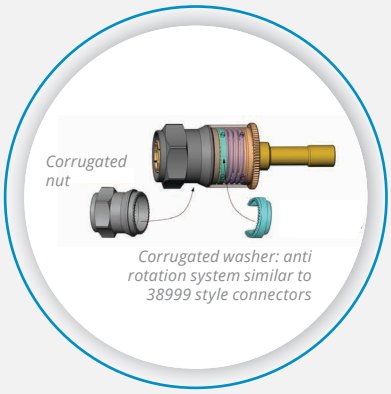
TNC Self-Lock
TNC 18 Self-Lock

N 18 Self-Lock

As a leader in civil aircraft interconnection and RF connectors, Radiall introduces a new innovative technology in response to market demands to eliminate locking wires. Radiall's Self-Lock RF connectors are the perfect solution to provide secure connection-facing vibrations experienced in aerospace applications.

With all the antennas present on civil aircraft, cable assemblies for airborne electronic systems are still receiving plenty of development attention. Coaxial cables remain the transmission medium of choice. It is not uncommon for a single aircraft to contain several hundred coaxial cable assemblies. Often the connection is difficult to reach and even more difficult to secure with tie wire. To expedite the installation of these assemblies into the aircraft, new self-locking connectors have been developed. Eliminating the need for safety wires saves many hours during both the initial build cycle and whenever equipment is removed or replaced for service.

Despite the obvious advantage of eliminating tie wires, several constraints imposed by the aircraft manufacturers made this effort a challenge. The envelope dimensions and mass had to remain very similar to those of the original connectors. Although this increased the mechanical complexity for the new design, this requirement has been achieved. Additionally, the ability to resist harsh environments has been maintained. The assemblies provide reliable performance over the -55° to +125°C temperature range from below sea level to 70,000 feet of altitude even when subjected to vibration levels up to 25 gs. An internal engineering test and evaluation program has shown that these designs still meet the stringent MIL-T-81490 and MIL-C-87104 requirements with the self-lock mechanism, all with limited increase in size and mass.



Radiall's Self-Locking series is the sole existing one step connection solution that simplifies life.

The Self-Locking design is intended to eliminate the need for lock-wiring the coupling nut in place with tie wire. The connector will still need to be tightened to the mating connector via the use of a torque wrench. The locking feature is achieved via a spring loaded, corrugated washer.

Self-Locking SMA connectors are also available upon request in addition to the N, TNC and SMA 2.9 connectors illustrated. The self-lock feature can be applied to straight connectors as well as 90° right-angle connectors. Self-Lock connectors are intermatable with any standard jack or female receptacle; there is no change in performance. All electrical, mechanical and environmental specifications are preserved. With this solution, mating-unmating becomes faster, safer (no risk of forgetting the lock wire) and is proven to be more robust even in the harsh environment of an airplane bilge.

The Self-Lock connectors can be provided on any compatible cable size.
The innovative crimp system attachment offers the opportunity for on-site assembly as well as ordering finished cable assemblies.

FEATURES & BENEFITS

- *No locking wire*
- *Secure connection in harsh environments*
- *Easy and fast to install*
- *Right angle version up to 40 GHz*
- *Hermetic crimp technology*
- *Self-Lock plugs compatible with standard jacks an receptacles*

APPLICATIONS

- *ARINC 791*
- *ARINC 792*
- *Air To Ground antenna connection*
- *Tactical communication*
- *Aircraft connectivity*
- *Communication and navigation*