

# Obsolete signal generators

*To Replace or Not to Replace? That is the Question*

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## Application Note



Repairing or replacing obsolete signal generators that are used in automated test systems for aerospace and defense is a significant challenge and headache for test engineers and their managers. These systems have a long lifespan, and must be supported for that duration, even when the original equipment in that system starts to fail and cannot be replaced with the original model. Users of these systems are faced with the dilemma to either repair or to replace these instruments.

Since the majority of the obsolete units are no longer being supported by the original equipment manufacturer, repairing the unit typically requires scavenging parts from dead units to fix the unit that is being used. In some cases, spare parts are very difficult or impossible to find. It is also a very time consuming and frustrating process to have to continually repair these units. Even if they are repaired, it may not be possible to calibrate them.

The other option is to replace the obsolete model with a new one. The concern here is in regards to the system's test program sets (TPS). These are huge programs that control all the functionality of the system and have been fully qualified at the time of system implementation and if changes are made to the software, as a result of adding the new equipment, the entire system would need to be qualified again. This would be a very time consuming and costly expense. In some cases it is almost impossible to reprogram the existing code because some of the TPS may use older compilers that are no longer available and the people who wrote the original TPS are likely no longer available.

Thus to replace a signal generator in these older systems without impacting the TPS, the new signal generator needs to be code compatible with the old signal generator, and it must also emulate the behavior as well. The Giga-tronics 2500B series Microwave Signal Generators have the ability to emulate other manufacturer's generators. The 2500B can accept and respond to programming commands as if it were an instrument from a different manufacturer. This allows the user to simply replace the old signal generator with the 2500B signal generator without making any changes to the TPS. The 2500B signal generators have been successfully used to replace obsolete test equipment in many systems.

Giga-tronics always provides integration and implementation support when replacing these obsolete units to ensure the migration is as seamless as possible. In many cases, the unit is a drop-in replacement. Since these systems are typically very complex, timing delays may be different with the new model. In this case, the signal generator's firmware would be tweaked to account for any nuances ensuring that the TPS would not need to be modified in any way. Giga-tronics typically provides implementation support at no additional charge, to ensure successful integration of the new replacement models. In addition, we have various analysis tools to help diagnose any timing issues and other variances that may occur.



The 2500B series Microwave Signal Generators are capable of emulating the previous generations of Giga-tronics signal generators, as well as the most popular legacy HP signal generators. In addition, the 2500B signal generator is compatible with the Giga-tronics 8003 and HP/Agilent Scalar Network Analyzers (SNA). Furthermore, since 2500B is capable of emulating many different models of instruments, it can be used as a spare for multiple models. For example, say there are two different models of legacy HP signal generators in a system and both models are being replaced. In this case it is possible to replace both HP signal generators with one model of 2500B. Two 2500Bs would be required for this example, and each would be emulating a different HP model. But only one spare would be needed to be maintained when a unit went out for servicing or calibration.

Contact your local sales representative or Giga-tronics to determine if a 2500B signal generator is the right model for replacing your obsolete signal generator. Engineering and integration support is provided.

<< <http://www.gigatronics.com/Legacy-Replacement-Program> >>



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