The ATTI 1140A VXIBus Synthesized Microwave Frequency Generator is a message-based VXI module capable of generating microwave signals. The 1140A has a frequency range of 0.01 to 20 GHz with a dynamic range of +10 to -90 dBm. The instrument has no manual controls other than interface address switches. The instrument is controlled via a computer using SCPI type commands. The instrument provides a variety of external modulation inputs including AM, FM, Pulse, and complex modulation. The 1140A is a VXIBus “C” size 3-wide plug-in module that requires a VXIBus mainframe for operation.

• 0.01 to 20 GHz Frequency Range
• +10 to -90 dBm Dynamic Range
• Excellent Spectral Purity
• Low Phase Noise
• Fast Switching Speed
• 1 Hz Frequency Resolution
• AM, FM, Pulse, and I/Q Modulation
• Complex IF Up-Conversion
• Controlled via a Computer using SCPI Type Commands
• Provides a Variety of External Modulation Inputs
• VXIBus “C” Size 3-Wide Plug-In Module

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1140A - Ideal Synthesizer for ATE Applications

The ATT1140A Synthesized Microwave Frequency generator is designed to be ideal for ATE applications. The 1140A occupies only three VXI slots, yet covers the entire 0.01 to 20 GHz frequency spectrum with 1 Hz resolution. The 1140A features unique complex modulation capability and outstanding spectral purity. The 1140A is fully compliant with Revision 1.3/1.4 of the VXIbus Specification for message-based instruments and with Standard Commands for Programmable Instruments (SCPI) Version 1993.

Superb Spectral Purity

The 1140A is designed to function in the VXIbus environment with no compromise in microwave performance. Despite the small size, full modular shielding and post-regulation with double filtering are utilized to ensure outstanding performance even when sharing a system with digital instruments. With spurious signals below -60dBc, the 1140A is an excellent choice as a local oscillator in radar/EW testing, narrow-band device characterization, and general communications system testing.

Unmatched Complex Modulation Performance

An IF Modulation input is standard on the 1140A and provides the means to up-convert complex digital signals or sophisticated jamming scenarios to microwave frequencies. The 40 MHz instantaneous bandwidth of the IF input supports wideband frequency, phase, and amplitude modulation as well as noise injection in any combination. Hence, the complex signals needed to test digital receivers can be easily produced, co-channel and adjacent channel interference can be simulated, and sub-microsecond frequency hopping up to a 40 MHz instantaneous bandwidth (fast enough to simulate many spread-spectrum sources) can be generated.
Plenty of Power

The 1140A with Option 06 provides +16 dBm of leveled output power across the entire band. This extra power coupled with the 1140A’s Custom Calibration feature enables you to provide leveled power at any point in your system. This powerful feature plus the 1140A’s excellent close-in phase noise make it the premier choice to serve as a local oscillator in a VXIbus test system.

High-Performance Amplitude, Frequency, Pulse and I/Q Modulation

The 1140A offers three independent modulation channels which may be used separately or simultaneously. Amplitude modulation (AM) at up to 90% modulation at modulating frequencies from DC to 100 kHz make the 1140A ideal for antenna scan pattern or satellite beacon simulation or other power control applications as well as for conventional AM. The extremely fast pulse modulation (PM) characteristics of the 1140A synthesizers allow for pulse widths of as little as 50 ns and pulse repetition frequencies as high as 10 MHz, enabling them to simulate virtually any radar or to serve as a highly versatile source for pulsed device characterization. Option 02 substitutes internal frequency modulation (FM) for the IF modulation channel. Modulation rates of up to 10 MHz and deviations of up to 25 MHz peak facilitate the testing of FM video and telemetry receivers as well as satellite communications systems.

Simultaneous use of the 1140A AM, FM, Pulse, and I/Q modulators in conjunction with a multi-channel Arbitrary Waveform Generator allows the creation or replication of virtually any form of modulated signal. The principal limitation on the application of the 1140A is the imagination of the user.

Small Size and Light Weight

No other product combines small size and light weight with uncompromised high performance as effectively as the ATTI 1140A. Less than one-fourth the size of comparable “rack and stack” microwave synthesizers, the 1140A is the perfect solution in portable and flight-line VXIbus automatic test systems or in any other application where small size, light weight, and high performance are important.

Accessory Modules Enhance the 1140A’s Capability

A host of accessory modules, including pulse generators, down-converters, power amplifiers, etc., are readily available to complement the 1140A synthesizer. ATTI, in partnership with other proven manufacturers of high-quality industry standard VXIbus equipment, can supply all of your automated microwave testing needs.

Flexible Programming

Full compliance with VXIbus Specification Revision 1.3/1.4 and Standard Commands for Programmable Instruments (SCPI) Version 1993.0 ensures ease of programming. And to further ease system integration and reduce programming time, ATTI supports the 1140A with software drivers for most popular development environments. The 1140A synthesizers provide synchronization and trigger capability that can be as simple or as complex as your system requires. The unique Triggered List Function, for example, allows you to step through more than 200 ordinary instrument functions triggered from a single trigger input. The flexibility of the 1140A software ensures easy integration into any system, regardless of its complexity.
ATTI Company Profile

The corporation:
- Has designed, developed and manufactured ATE since 1987
- Has delivered and supported many test systems in both the commercial and military sectors
- Is an innovator in developing and implementing VXI technology solutions
- Has developed over one thousand test program sets, covering the test spectrum from simple to extremely complex
- Has numerous satisfied customers, including:
  - Agusta, Italy
  - Boeing
  - Esdas, Turkey
  - Havelsan, Turkey
  - Hellenic Air Force
  - Japanese Air Force
  - KLM Royal Dutch Airlines
  - Lockheed Martin
  - NATO
  - Northrop Grumman
  - Palomar Products, Inc.
  - Royal Saudi Air Force
  - US Air Force
  - US Navy

ATTI Worldwide Support

The corporation:
- Has developed Obsolescence Mitigation Replacement (OMR) technology which represents ATTI's corporate commitment to customer use and TPS investment in our test systems
- Has delivered BRAT test systems worldwide
- Offers one of the most experienced service, training and support teams in the world
- Has worked with our customers solving diverse test challenges in digital, analog, and RF applications
- Is committed to total hardware and software support including service, spares, upgrades, documentation, training, and configuration control
- Has the financial efficacy to guarantee long-term commitments

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