

## Complex Signal Simulator for Defense Electronics and Communications

### Based on Keysight M8190A Arbitrary Waveform Generator (AWG)

### Description

Adapted to the creation of complex and realistic test for sophisticated signal simulations.

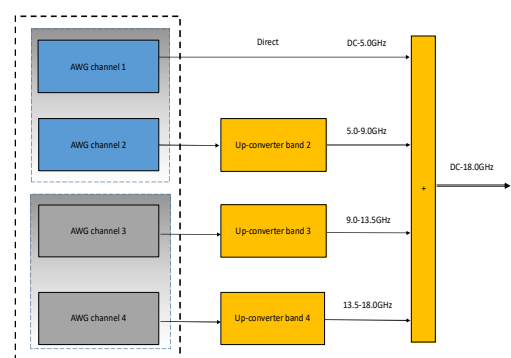
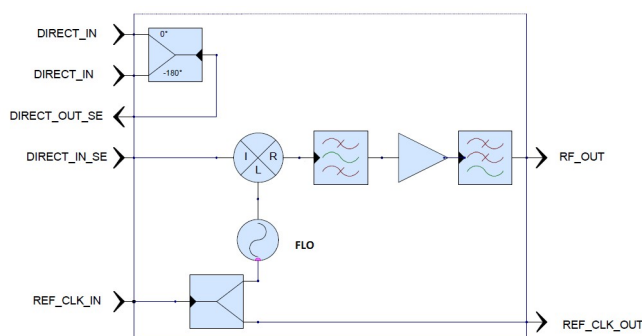
Can synchronize multiple instruments to achieve very complex simulations for advanced Electronic Warfare Threats or Adaptable (flexible or Multipurpose):

- for Radar
- for Communication Systems

Different software tools are available for creating waveforms, such as:

- MATLAB, LabVIEW
- Agilent N7620B Signal Studio for pulse building or W1461 System View radar libraries
- Synopsis EWS 3D environment simulation software gives the capability to create very sophisticated and realistic 3D scenarios for radar environment modeling or telecommunication (in development). EWS is compatible with the Keysight M8190A Arbitrary Waveform Generator; it permits to create pulse sequences from a 3D description of the battlefield. Moreover EWS can import basic patterns created with Keysight pulse builder or computed using MATLAB scripts.

The 18GHz bandwidth is obtained by combining the RF outputs of 4 AWG channels followed by their dedicated up-converter modules in a special hardware and controlled with a dedicated software. Each up-converter module includes: Microwave Phase Matched Balun, Amplifier, Equalizer, Harmonic Filter.



### Features

Leading edge AWG performance specification

- -80dBc Spurious Free Dynamic Range
- 12 bits vertical resolution
- 16Gsample waveform memory
- Versatile Signal Scenario Generator
- Long play time
- Dynamic control input
- Compact size and rack mounting instrument 19" 5 slots
- Full operational in one standalone instrument

Complete solution for wide band frequency complex signal simulations.

- Analog bandwidth 18GHz (Instantaneous Bandwidth)
- Compact size and rack mounting instrument 19" 2U in addition of the M8190A's 5 slots

Direct generation for wide band RF/MW up to 86GHz in sub bands

- up to 18GHz in one band (AWGUP9-18-1)
- up to 86GHz in sub-bands (AWGUPxxxx series)

### Applications

- Instantaneous wideband RF/MW to generate complex and realistic signals for new generation of radar, communications systems, electronic warfare, SIGINT systems and physic research equipment.
- Wide band RF/MW output signals up to 18GHz (optional 40GHz in sub bands)
- Radar tests: Radar with Coherent threats, Jammers, Mono-pulse ( Sum, Elevation, Azimuth, Guard), Radar target returns and clutter
- ESM tests: Direction Of Arrival in Amplitude & Phase simultaneously & Time of Arrival,
- Communication tests: Complex modulations, Frequency hopping systems, Satellite transponders
- Simultaneous composite sources environment generation such as radar and jammer and communications
- Leading edge research in electronics, physics & chemistry: high speed phenomena's, very fast pulses, high accurate & repeatable complex signals, low jitter and low phase noise signal generation

### M8190A + 2U rack

