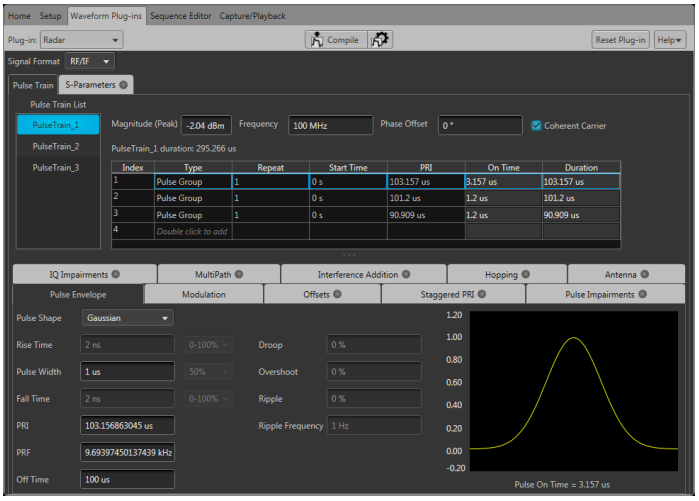
Tektronix®

# Applications for SourceXpress® and AWG70000/5200 series generators

## RADAR Plug-in Datasheet




The Tektronix RADAR plug-in is a simple and flexible tool to create RADAR pulsed waveforms with various modulations and impairments for the purpose of building complex and real world RADAR test signals. The plug-in integrates into the SourceXpress waveform creation platform, and the AWG70000 series and AWG5200 series arbitrary waveform generators.

### Key features

- Allows the creation of multiple pulses and pulse groups to simulate scenarios like Multiple Target Returns and Antenna scanning
- Customize pulses and add impairments to simulate real world signals
- Wide variety of intra-pulse modulations (such as LFM, Barker, Piecewise LFM, Non Linear FM,…,) catering to different kinds of pulse compression schemes
- Simulate antenna scanning with different beam profiles to simulate real world target returns for RADAR receivers and Electronic Warfare (EW) scanners
- Define Inter Pulse-hopping Patterns in both Frequency and Amplitude to generate signals for anti-jamming applications
- Simulate Doppler frequency shifts, staggered PRI, Multipath and other features to help customers test their RADAR receivers for real world scenarios in the lab
- S-Parameter emulation (requires license)
  - Directly convolve Scattering parameters with the pulse to recreate the channel characteristics. Cascading S-Parameters allows you to cascade up to six Touchstone files of the same format to emulate a cascaded channel
- Offline Mode
  - Designed to also run on an external PC via the SourceXpress PC application, thereby reducing the time taken to synthesize large waveforms and leaving the instruments free for continued testing
- Seamless transition between design and playback
  - The easy to use graphical user interface integrates seamlessly with the user interfaces of the SourceXpress PC application and the Tektronix AWG70000 series and AWG5200 series generators
- Designed for integration for automated test or manufacturing
  - Programmatic Interface allows for integration into existing workflows

## Ultimate Radar signal flexibility

The Radar plug-in provides the ultimate in flexibility for creating Pulsed Radar waveforms. It gives users the ability to build custom Radar Pulse suites starting from pulse-to-pulse trains to pulse groups. It supports a variety of modulation schemes including LFM, Up-Down Chirp, QPSK, BPSK, Barker/Frank/Polyphase Codes including P1/P2/P3/P4, Step FM, Nonlinear FM, User-defined Step FM/AM and Step PM/AM, and Custom Modulation. It also has the ability to generate pulse trains with staggered PRI to resolve Range and Doppler ambiguity, frequency hopping for Electronic Counter-Counter Measures (ECCM), and pulse-to-pulse amplitude variation to simulate Swerling target models, including antenna scan patterns, clutter, and multipath effects. Add as many topics as you want for a description.

## Complex environments

Commercial, Electronic Warfare, Simulation and design RADAR applications are becoming more complex as environments, threats and RADAR needs become more complex. To meet these needs, the Radar plug-in allows for the development, recreation and simulation of real world radar signals in an easy to use environment.

## Requirements

- Plug-in installed with SourceXpress on PC:
  - SourceXpress software version 5.3 or greater
  - PC operating systems: Windows 7 (64 bit), Windows 8 (64 bit), Windows 10 (64 bit)
- Plug-in installed on compatible instruments:
  - AWG70000 Series, firmware version 5.3 or greater
  - AWG5200 Series, firmware version 6.0 or greater

# Ordering information

## Models

| | |
|---|---|
| **RADARFL-SS01** | RADAR plug-in with a floating license that can be reassigned to different Tektronix instruments or PCs. |
| **RADARNL-SS01** | RADAR plug-in with a node locked license tied to a single instrument or PC. |

The RADAR plug-in can be downloaded for free and a trial license is available. Complete functionality and continued use requires the purchase of a license.

Visit the SourceXpress, AWG70000, or AWG5200 product pages to obtain the software and license.

## How to purchase

To purchase, visit the Tektronix web site to request a quote or contact your nearest sales representative.

## Additional information

This and other plug-ins are available for SourceXpress and compatible waveform generators.

Use the following website links to view available application plug-ins, downloads, and trial licenses.

- SourceXpress website
- AWG70000 Series website
- AWG5200 Series website

## Licensing

Each plug-in (for SourceXpress, the AWG70000A Series generators, and the AWG5200 Series generators) requires the purchase of a license before they are functional. Some plug-ins may require additional licenses to unlock specific plug-in features. Licenses are managed within the Tektronix Asset Management System (Tek AMS). The Tek AMS web site address is www.tektronix.com/products/product-license. Product license management requires a login account.

There are two types of licenses available: node-locked (NL) and floating (FL).

- Node Locked Licenses provide your own copy of the application on your instrument or personal computer and are permanently assigned to a specific Hosti ID or product model/serial number.
- Floating licenses can be moved between different Host IDs or product models.

Use the Tektronix Asset Management system to check in and check out floating licenses.

## Certifications

Tektronix is registered to ISO 9001 and ISO 14001 by SRI Quality System Registrar.

Product(s) complies with IEEE Standard 488.1-1987, RS-232-C, and with Tektronix Standard Codes and Formats.

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**For Further Information.** Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology. Please visit www.tek.com.

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