

Industry-leading Bandwidth Enables the Generation of Fast Changing Signals

Digital RF technologies enable time varying techniques to more efficiently use available spectrum, avoid interference and ensure seamless operation. For example, WLAN signals seek out clear frequencies and adapt their modulation type to best use the available channel. Ultra-wideband (UWB) transmissions use low power and frequency hopping to mitigate potential interference to other systems using the same frequency bands. Other wideband applications, such as radar, use a pulse compression technique with bandwidths that often exceed the GHz range.

Traditional RF signal generators are capable of replicating RF signals but only for narrow frequency band applications. Advanced technologies, like UWB, transmit RF signals with extremely short electrical pulses spanning many frequencies at once. This type of operating behavior necessitates signal generation across a wide frequency spectrum to fully test and characterize wideband RF devices.

The new AWG7000 series arbitrary waveform generators (AWGs) aid engineers needing to address these wideband RF challenges. Offering sample rates up to 20 GS/s, 5.8 GHz bandwidth and 10 bit vertical resolution, the AWG7000 Series delivers the performance that is necessary to produce the signals that wideband RF devices transmit and receive. The AWG7000 Series is the world's only signal source that can direct 5GHz (four points of data per cycle) precise signals produced with 5.8 GHz bandwidth.

In addition to a wide bandwidth, design engineers need the ability to generate signals that change quickly over time. This can be achieved by virtue of the programmable nature of the AWG7000 and the ability to sequence through a range of different waveforms.

With the advanced DAC and high precision analog circuitry, the AWG7000 Series directly addresses the test and characterization needs of design engineers working with wideband RF. Users can generate fast changing signals that span a wide frequency spectrum and have high dynamic range enabled by the 10-bit vertical resolution. This enables more efficient and cost-effective testing and characterization of today's and tomorrow's wideband digital RF and high-speed serial devices.