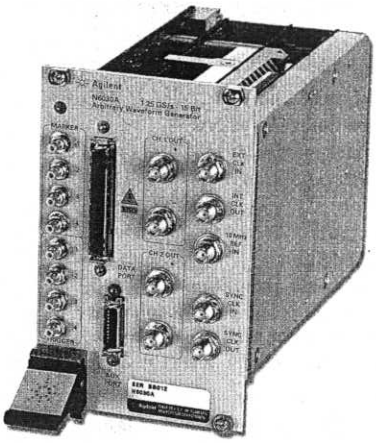
- **1.25 GS/s Sample Rate**
- **15 bit vertical resolution**
- **Dual channel, differential outputs**
- **16 MS waveform memory**
- **Multi-module synchronization**
- **Multiple programmatic interfaces**



N6030A

N8241A

Agilent's N6030A and N8241A arbitrary waveform generators deliver unprecedented performance for creation of complex wideband waveforms. High sampling rate and high bit resolution provided in a single instrument enable designers to create ideal waveforms for accurate test of radar, satellite, and frequency agile systems. Each channel of the arbitrary waveform generator provides 500 MHz of modulation bandwidths and over 65 dBc of spurious free dynamic range. When combined with a wideband I/Q upconverter, modulation bandwidth of 1 GHz can be realized at microwave frequencies for authentic signal simulations for IF and RF subsystem test.

Specifications[1]

Channels
Two independent channels available as baseband or IF outputs
- CH1: Single-ended and differential
- CH2: Single-ended and differential

Modulation Bandwidth
500 MHz per channel (1 GHz I/Q bandwidth)

Resolution
15-bit (1/32,768 levels)

Output Spectral Purity – (CH1 and CH2)
- Harmonic distortion: <–65 dBc for each channel DC to 500 MHz
- Non-Harmonic spurious: <–75 dBc for each channel DC to 500 MHz
- Noise floor: <–150 dBc/Hz across the channel bandwidth

Sample Clock-Internal
Fixed 1.25 GS/s

Internal Clock Output
+3 dBm nominal

External Clock Input
Tunable 100 MS/s to 1.25 GS/s

External Clock Input Drive Level
+5 to –15 dBm typical

Phase Noise Characteristics
1 kHz: –95 dBc/Hz
10 kHz: –115 dBc/Hz
100 kHz: –138 dBc/Hz
1 MHz: –150 dBc/Hz

Noise Floor
–150 dBc/Hz

Accuracy
Same as 10 MHz timebase input

Frequency Reference
Input Drive Level
+2 to +12 dBm into 50 ohms (+2 dBm nominal)

Waveform Length
8 MS per channel (16 MS with Option 016)

Minimum Waveform Length
128 samples

Waveform Granularity
16 samples

Segments
1 to 256 k unique segments can be defined consisting of waveform start and stop addresses, repetitions, and marker enable flags

Sequences
Up to 256 k total unique waveform sequences can be defined. A sequence is a contiguous series of waveform segments

External Triggers
Number of Inputs
5 each (4 SMB female front panel connectors plus one software trigger)

External Markers
Markers can be defined for each waveform segment

Number of Outputs
4 each (SMB female)

Module Synchronization
Supports system scaling for any number of arbitrary waveform generator modules. A single module can support fan-out of 8 modules for precise triggering and repeatability. Driver boards may be used to scale any number of modules

Key Literature & Web Link

N6030A Arbitrary Waveform Generator Technical Overview, p/n 5989-1457EN
N8241A Arbitrary Waveform Generator Technical Overview, p/n 5989-2595EN

www.agilent.com/find/awg
www.agilent.com/find/synthetic

Ordering Information

N6030A 15-bit, 1.25 GS/s Arbitrary Waveform Generator
N6031A 10-bit, 1.25 GS/s Arbitrary Waveform Generator
N6032A 15-bit, 625 MS/s Arbitrary Waveform Generator
N6033A 10-bit, 625 MS/s Arbitrary Waveform Generator
N8241A 15-bit, 1.25 GS/s or 625 MS/s Arbitrary Waveform Generator
N8242A 10-bit, 1.25 GS/s or 625 MS/s Arbitrary Waveform Generator

Typical Arbitrary Waveform Generator Options:
Option PXI Mainframe and Accessory Options
Option 008 8 Mega-sample Memory
Option 016 16 Mega-sample Memory
Option 300 Dynamic Sequencing Capability
Option 330 Direct Digital Synthesis Software

[1] Key specifications for the N6030A and N8241A. Refer to the data sheets for complete specifications on all the different model number products.