Model 2711A

ARBITRARY WAVEFORM GENERATORS

- Very High-Fidelity - 0.005% Waveform Distortion
- 16-Bit (0.0015%) Resolution
- 0.1S/s to 2MS/s Adjustable Sample Rate
- Sync Trigger Output for Multi-Phase Operation
- Waveform Creation Software Included
- 10 Standard Waveforms
- 64k Waveform Memory
- Stores 100 Custom Waveforms
- RS-232C and GPIB
- Options
  - 100 Step Sequence Generator
  - Rack Mount Kit

Low Cost, 16-Bit AWG

Signal Integrity

Waveforms will always be consistent and repeatable because the 2711A is a true AWG. It uses the raster scan technique with sequential addressing of waveform memory and a variable sample clock rate to adjust the output frequency. Other generators use phase accumulator-based addressing, which can skip or repeat waveform data points. The typical THD (total harmonic distortion plus noise) of the 2711A is -86 dB, which makes it ideal for applications sensitive to signal quality. No other arbitrary waveform generator matches the 2711A's price and performance.

Comprehensive Features

With superior fidelity and wide dynamic range, the 2711A has outstanding performance, offering 16-bit vertical resolution with over 64k of horizontal memory. Standard or arbitrary waveforms are created through the front panel or waveform creation software. The adjustable sample clock ranges from 0.1S/s to 2MS/s. Superior fidelity, low cost, and wide dynamic range make the 2711A ideal for applications involving high precision, low voltage or signal amplification. These include power line harmonics, audio signals, automotive air bags, medical devices and a host of other applications.

Multiple Unit Operation

Each 2711A is equipped with a synchronous trigger output. The synchronous output allows external instruments, including two or more 2711A units, to be hardware triggered by a master 2711A unit. This produces multiple-phase signals with highly accurate phase offsets. Because the 2711A uses the raster scan technique and sequential addressing, there is no need to recalibrate phase offsets every time a frequency change is made. DDS-type generators require this recalibration.

Systems Ready

The Model 2711A is a low cost version of the Model 2411B. It has the same basic performance capabilities but is designed specifically for systems applications where low cost and performance are valued higher than extended front panel functions. 2711A includes standard RS-232C and GPIB interfaces. WaveWorks™ Jr., wave creation software is also provided at no additional charge. Three multi-phase modes are available to synchronize multiple units for phase sensitive applications.

Function Generator Operation

Direct front panel access to 10 standard waveforms with adjustable parameters provides function generator operation for basic lab use. For test applications where custom signals are required, up to 100 unique waveforms may be stored in waveform memory and recalled via the 2711A's front panel or the included WaveWorks™ Jr. wave creation software.

Effective User Tools

Expand the 2711A's memory capabilities by adding an optional sequence generator. Each sequence program can have up to 100 steps, which can link to any of the 2711A's 100 user-defined waveforms. Each waveform may be looped over one million times per step. Ten unique sequence programs may be stored in the sequencer's non-volatile memory.

WaveWorks™ Jr. is a complete software solution for importing, exporting, creating, and editing waveform data in the common ASCII formats .CSV, and .PRN. Windows™ compatible, it allows full programming access to both the instrument and the sequence generator. WaveWorks Pro+™, advanced wave creation software, is available as an upgrade. See the WaveWorks Pro+™ data sheet for more details.

Warranty

The Model 2711A is backed by a full 3-year warranty and TEGAM's 30-day no risk trial.



Prices and specifications subject to change without notice.

TEGAM®

YOUR GLOBAL SOURCE FOR TEST AND MEASUREMENT SOLUTIONS

Model 2711A

LOW COST 16-BIT AWG

Specifications

Output Waveforms
Up to 100 High-definition custom waveforms, Sine, Square, Triangle, Ramp, DC, Exponential, Haversine, Pulse, Gaussian, Sin x/x (Sinc).

Waveform

Storage:	100 Waveforms
Resolution:	Horizontal Points: 65,500 max Vertical Points:16 bits, 65,536 (+32,767 to -32,768)
Sample Rate:	0.1Hz to 2MHz (10s to 500ns) 4-digit resolution ±50ppm accuracy
Transition Time:	< 150ns

(Tested with square wave, filter off, 10Vp-p, 50Ω termination.).

Spectral Purity: (THD + Noise): -86 dB typical

(Tested with 80kHz measurement bandwidth, 2MHz clock, 2 kHz sine wave, 1000 points, filter on, full amplitude, 50Ω termination.)

Amplitude and Offset

Range	Resolution	Accuracy
±1.00 to 10V	10mV	1% of setting + 20mV
±100mV to 999mV	1mV	3% of setting + 5mV
±10mV to 99.9mV	100µV	5% of setting + 1mV

Note: 50Ω source impedance, measured at open circuit tested with l kHz sinewave plus DC offset.

Analog Filter
User-selectable 700kHz 7th order, 40kHz 3rd order

Sequence Generator (Optional)

Waveform:	Transient-free Loop-and-Link
Repetitions:	Loop: 1,048,575 times Link: 100 waveforms
Program:	100 Steps total
File:	10 Sequences

Operational Modes

Continuous:	Output runs continously between selected memory address locations.
Triggered:	Output at start point until triggered, then runs once.
Gated:	As triggered except output is continous until gate signal ends.
Burst:	Each trigger outputs a preprogrammed number of waveforms from 1 to 1,048,575.
Toggled:	Alternate triggers gate the output waveform.
Master-Slave:	For multi-unit operation.
Cont-Sync:	Multiple units run continuously in sync with the master unit.
Trig-Sync:	Multiple units run in sync with the master unit for one cycle when the master unit is triggered.
Trig-Seq:	A tail-chasing mode between the master and the slave unit initiated by triggering the master unit.

Outputs

Main Output:	Front-panel/50Ω impedance.
Sync Output:	Front-panel TTL sync output, 50Ω impedance.
Clock Out:	Rear panel AWG waveform sample clock output (TTL). X2 sample clock.
Reference Out:	Rear panel internal 10MHz reference output (TTL).
Sync Trigger Out:	Rear-panel BNC (TTL) for multiple unit operation.

Inputs

TRIG IN:	Rear-panel TTL trigger input for triggered, gated, toggled, burst, and master slave modes.
CLOCK IN:	Rear-panel sample clock input (TTL, ≤ 4MHz).
REF IN:	Rear-panel 10 MHz reference input. The internal crystal-controlled oscillator will phase-lock to the input.

Trigger Sources

Manual Trigger:	Front-panel button
Ext. Trigger Input:	Rear-panel BNC connector

Creation Tools

WaveWorks™Jr. for Windows™

Operating System:	Windows 95, 98, XP, & 2000.
PC Requirements:	486DX or better with 4MB RAM.
Interfaces:	COM port or National Instruments AT-GPIB card or equivalent.
Standard Functions:	21
Math Operation:	6 Operators, 12 Transfer Functions
Sequence Creation:	Optional hardware required
Waveform Analysis:	
Frequency Domain:	FFT and IFFT; up to 500th harmonic, graphic display, and tabulation.
Time Domain:	Waveform and digital pattern.
Edit:	Point, Vertex, and Harmonics (FFT and IFFT).

Computer Interface

RS-232C:	19.2k Baud, max.
GPIB:	IEEE Std. 488.2-1987

General

Temperature Range:	73.4°F +/-5.4°F (23°C +/-3°C) for specified accuracy
Operates:	32°F to 122°F (0°C to +50°C)
Storage:	-4°F to 140°F (-20°C to +60°C)
Dimensions:	10.14" X 4.53" X 11.81" (25.8 X 11.5 X 30 cm) W x H x D
Weight:	11 lbs (5.0kg)
Power:	55VA; 45W (max) 100/120/220/240VAC, +5%, -10%; 48 to 63Hz.

This data sheet was current when it was produced. However, products are constantly being updated and improved. Because of this some differences may occur between the descriptions herein and the current product. Prices and specifications may be changed without notice.

TEGAM®
YOUR GLOBAL SOURCE FOR TEST AND MEASUREMENT SOLUTIONS

TEN TEGAM WAY • GENEVA, OHIO 44041
440-466-6100 • FAX 440-466-6110
www.tegam.com • e-mail: sales@tegam.com