# 250MS/s Dual-Channel Arbitrary Waveform / Function Generator

TABOR'S NEW WONDER WAVE SERIES



# MODEL WW2572A

- Dual-channel 250 MS/s waveform generator
- Sine and Square waves generated to 100MHz
- 16 Bit amplitude resolution
- 1M waveform memory, 2M waveform memory, optional
- 16 Vpp into 50Ω, double into open circuit
- Multiple run modes including trigger, re-trigger and trigger delay
- AM, FM, Arbitrary FM, FSK, ASK, (n)PSK, (n)QAM, Frequency Hop and sweep modulation
- Powerful sequence generator links and loops segments in user-defined fashion. Stores up to 10 different sequence tables
- 16 Bit LVDS parallel output
- High resolution 3.8" LCD, color display
- Ethernet 10/100, USB 2.0 and GPIB interfaces
- Multi-Instrument synchronization
- ArbConnection software for easy waveform creation&control

Model 2572A, is a dual-channel frequency agile waveform synthesizer combine industry leading performance, frequency agility and modulation capability in a stand-alone, bench-type product. Signal outputs in the range of 1Hz to 250MHz and 16-bit vertical DAC resolution provide the test stimuli required for the decades to come. It can be used as an arbitrary waveform generator, modulating generator, as well as function and pulse generator.

**250MS/s Performance**

Higher performance test equipment and systems are needed as products which use increasing signal bandwidths are developed. The sample rate generator can be programmed from frequencies as low as 1Hz to 250MS/s for sine and square waves with superior waveform quality and purity. For example, phase noise is typically below 120dB/Hz at 10kHz offset for a 10MHz sine wave.

**High Speed Function Generator**

nterested in standard functions? There are 10 built-in functions that cover most routine requirements. These are sine, triangle, square, pulse, ramp, sinc, Gaussian, exponential, noise, as well as DC.

Sine and square waves can be generated from frequencies as low as 100μHz to frequencies as high as 100MHz. All functions and their respective parameters are accessible via the front panel.

**Waveform Memory**

Longer waveform memory minimizes test duration by allowing multiple waveforms to be loaded simultaneously and retrieved as needed for the specific test. Both channels come with 1M points of memory as standard. Optional 2M memory is available for applications requiring longer memory.

**Digital Outputs**

16-bits are available as digital patterns from a rear-panel VHDC connector. Output level is LVDS which is efficient and sufficient for high speed digital data transmissions. Digital patterns are built the same way as arbitrary waveforms; thus the immense power of the waveform generator with all its functions and features is harnessed behind this output turning the 2572A into the most powerful pattern generator in its class.

**Frequency Agility**

Decrypting radio transmission often employs frequency hopping. The 2572A provides breakthrough technology that allows simulation of 12-bit decrypted code as easy as writing a simple hop table. The frequency hop mode is fast, coherent and provides a great tool for simulating code transmission without loosing speed and integrity.

**Accurate Output**

As standard, the instrument is equipped with an internal frequency reference that has 1ppm accuracy and stability over a period of 1 year. An external frequency reference is provided on the rear panel for applications requiring greater accuracy or stability, supported by the instrument's 14 digits resolution.

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**Memory Segmentation and Sequencing**
Solving almost every complex application, powerful segmentation and sequencing produce an endless variety of complex waveforms. The waveform memory can be divided into multiple waveform segments and sequenced in user-selectable fashion to create complex waveforms that have repeatable segments and thus saving precious memory space. Five different advance modes are available for the 2572A series to step through the sequence table, including stepped and mixed advance modes and thus increasing efficiency of the test system. To solve even the toughest application, the products allow generation of up to 100 different sequences, each capable of linking 16k waveform fragments and looping each waveform up to 1M times.

**Modulation Capability**
Agility and modulation capabilities open the door to diverse applications. In addition to the capability of generating any shape and style of waveform with the arbitrary waveform generation power, the products can also do standard modulation schemes such as FM, AM, FSK, (n)PSK, (n)QAM and frequency hops without sacrificing the power of the instrument control and output run modes.

**Precise Inter-Channel Phase Control**
In the 2572A, both channels share a common sample clock, and both channels are triggered from the same source assuring tightly synchronized channel-to-channel timing. Precise control over channel-to-channel phase offset is achieved by allowing control over channel start phase with a resolution down to as small as 1 waveform point. This enables extremely accurate timing or phase dependencies to be studied, such as those found in high speed digital communication systems.

**Easy to use**
Large and user-friendly 3.8" back-lit color LCD display facilitates browsing though menus, updating parameters and displaying detailed and critical information for your waveform output. Combined with numeric keypad, cursor position control and a dial, the front panel controls simplifies the often complex operation of an arbitrary waveform generator.

**High Speed Access**
Access speed is an increasingly important requirement for test systems. Included with the instrument is a variety of interfaces: Ethernet 10/100, USB 2.0 and GPIB so one may select the interface most compatible to individual requirements. Using any of the external interfaces, controlling instrument function and features as well as downloading waveforms and sequences are fast, time saving and easily tailored to every system regardless if it is just a laptop to instrument or full-featured ATE system. IVI drivers and factory support will speed up system integration thus minimizing time-to-market and reduce system development costs significantly.

**Multi-Instrument Synchronization**
Multiple 2572A can be synchronized using a Master-Slave arrangement allowing users to benefit from the same high quality performance in their multi-channels needs.

**Automated External Self-Calibration**
Normal calibration cycles in the industry range from one to three years where instruments are sent to a service center, opened to allow access to trimmers, calibrated and certified for repeated usage. Leading-edge technology was implemented to allow calibration from any interface, USB, GPIB or LAN. Calibration factors are stored in a flash memory thus eliminating the need to open instrument covers.

**ArbConnection**
ArbConnection is a graphical tool that provides an unlimited source of Arbitrary Waveforms. With the ArbConnection software you can control instruments functions, modes and features. You can also create a virtually infinite amount of test waveforms. Freehand sketch allows you to draw your own custom waveform for quick analysis of analog signals. You can use the built-in equation editor to create your own exotic functions. Add or subtract components of a Fourier series to characterize digital or analog filters or inject random noise into a signal to test immunity to auxiliary noise.

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## Service and Support

Beyond providing precision Test & Measurement instruments, Tabor Electronics provides unparalleled service and support, and is continuously finding new ways to bring added value to its customers.

Our after-sales services are comprehensive. They include all types of repair and calibration, and a single point of contact that you can turn to whenever you need assistance. As part of our extensive support, we offer individualized, personal attention Help Desk, both online and offline, via e-mail, phone or fax.

Tabor Electronics maintains a complete repair and calibration lab as well as a standards laboratory in Israel and USA. Service is also available at regional authorized repair/calibration facilities.

Contact Tabor Electronics for the address of service facilities nearest you.

## Applications

For expert technical assistance with your specific needs and objectives, contact your local sales representative or our in-house applications engineers.

## Manuals, Drivers, and Software Support

Every instrument comes equipped with a dedicated manual, developer libraries, IVI drivers, and software. However, if your specific manual is lost or outdated, Tabor Electronics makes it possible to log-on to its Download Center and get the latest data “in a click”.

## Product Demonstrations

If your application requires that you evaluate an instrument before you purchase it, a hands-on demonstration can be arranged by contacting your local Tabor Electronics representative or the Sales Department at our Corporate Headquarters.

## Five-year Warranty

Every instrument from the Wonder Wave series comes with a five-year warranty. Each one has full test results, calibration certificate, and CD containing product's manual and complete software package. Our obligation under this warranty is to repair or replace any instrument or part thereof which, within five years after shipment, proves defective upon examination. To exercise this warranty, write or call your local Tabor representative, or contact Tabor Headquarters and you will be given prompt assistance and shipping instructions.


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# Specification
# 250MS/s Dual-Channel Arbitrary Waveform / Function Generator

# Model WW2572A



## CONFIGURATION

**Output Channels** 2, semi-independent

## INTER-CHANNEL CONTROL

### LEADING EDGE OFFSET

**Description:** Channel 1 edge start trails channel 2 edge by a programmable number of points.
**Range:** 0 to 1Meg points, 2Meg optional
**Resolution and Accuracy:** 1 point
**Initial Skew:** < 1ns

## INTER-CHANNEL DEPENDENCY

**Separate controls:** Output on/off, amplitude, offset, standard waveforms, user waveforms, user waveform size, sequence table
**Common Controls:** Sample clock (Arb), frequency (Std), reference source, trigger modes, trigger advance source, SYNC output, Modulation

## STANDARD WAVEFORMS

**Waveforms:** Sine, Triangle, Square, Pulse, Ramp, Sinc (Sine(x)/x), Gaussian, Exponential, Repetitive Noise, DC, Half-Cycle.
**Frequency Range:** Waveform dependent
**Source:** Internal synthesizer

### SINE

**Frequency Range:** 100µHz to 100MHz
**Start Phase Range:** 0-359.95°
**Start Phase Resolution:** 0.05°

**Harmonics Distortion:**

| | ≤ 3Vpp | ≤5Vpp | ≤10Vpp |
|---|---|---|---|
| DC to 1MHz | -55dBc | -48dBc | -37dBc |
| 1 to 10MHz | -50dBc | -43dBc | -35dBc |
| 10 to 50MHz | -35dBc | -30dBc | -28dBc |
| 50 to 100MHz | -28dBc | -25dBc | -23dBc |

**Non-Harmonic Distortion:**

| | |
|---|---|
| DC to 50MHz | -65dBc |
| 50 to 100MHz | -60dBc |

**Total Harmonic Distortion:**

| | |
|---|---|
| DC to 20MHz | 0.1% |

**Flatness (1kHz):**

| | |
|---|---|
| DC to 1MHz | 1% |
| 1MHz to 10MHz | 3% |
| 10MHz to 25MHz | 5% |
| 25MHz to 80MHz | 10% |
| 80MHz to 100MHz | 15% |

**Phase Noise - Internal SCLK**

| | |
|---|---|
| 100Hz Offset | -70dBc/Hz |
| 1kHz Offset | -85dBc/Hz |
| 10kHz Offset | -92dBc/Hz |
| 100kHz Offset | -112dBc/Hz |
| 1MHz Offset | -140dBc/Hz |

### TRIANGLE

**Frequency Range:** 100µHz to 32MHz
**Start Phase Range:** 0-359.9°
**Start Phase Resolution:** 0.05°

### SQUARE

**Frequency Range:** 100µHz to 100MHz
**Duty Cycle Range:** 0% to 99.9%
**Rise/Fall Time:**

| | |
|---|---|
| DC to 10Vpp | <4ns |
| 10Vpp to 16Vpp | <5ns |

**Aberration:**

| | |
|---|---|
| DC to 10Vpp | <5%+10mV |
| 10Vpp to 16Vpp | <7% |

### PULSE

**Frequency Range:** 100µHz to 32MHz
**Delay, Rise/Fall Time, High Time Ranges:** 0%-99.9% of period (each independently
**Rise/Fall Time:**

| | |
|---|---|
| DC to 10Vpp | <4ns |
| 10Vpp to 16Vpp | <5ns |

**Aberration:**

| | |
|---|---|
| DC to 10Vpp | <5%+10mV |
| 10Vpp to 16Vpp | <7% |

### RAMP

**Frequency Range:** 100µHz to 32MHz
**Delay, Rise/Fall Time Ranges:** 0%-99.9% of period (each independently)

### SINC (Sine(x)/x)

**Frequency Range:** 100µHz to 32MHz
**"0 Crossings":** 4-100

### GAUSSIAN

**Frequency Range:** 100µHz to 32MHz
**Time Constant:** 10-200

### EXPONENTIAL PULSE

**Frequency Range:** 100µHz to 32MHz
**Time Constant:** -100 to 100

### REPETITIVE NOISE

**Bandwidth:** 50MHz

### DC

**Range:** -16V to 16V

### HALF-CYCLE WAVEFORMS

**Function Shape:** Sine, Triangle, Square
**Frequency Range:** 100Hz to 2MHz
**Phase Start Range (Sine/triangle only):** 0 to 359.9°
**Start Phase Resolution:** 0.05°
**Run Modes:** Continuous, Triggered
**Delay Between Half Cycles (Continuous only):** 500ns to 21s
Delay Resolution 20ns

## ARBITRARY WAVEFORMS

**Sample Rate:**

| | |
|---|---|
| Continuous Mode | 1.5S/s to 250MS/s (typically 300MS/s) |
| All Other Modes | 1.5S/s to 225MS/s (typically 250MS/s) |

**Vertical Resolution:** 16 bits
**Waveform Memory:** 1M points (2M optional)

### MEMORY SEGMENTATION

**No. of Segments:** 1 to 16k
**Min. Segment Size:** 16 points
**Resolution:** 4 points size increments from 16 to 1M points (2M optional)

## SEQUENCED WAVEFORMS

**Operation:** Segments may be linked and repeated in a user-selectable order to generate extremely long waveforms. Segments are advanced using either a command or a trigger

### ADVANCE MODES

**Automatic Sequence Advance:** No trigger required to step from one segment to the next. Sequence is repeated continuously per a pre-programmed sequence table.
**Stepped Sequence Advance:** Current segment is sampled continuously until a trigger advances the sequence to the next programmed segment and sample clock rate.

# Specification
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**Single Sequence Advance:** Current segment is sampled the specified number of repetitions and then idles at the end of the segment. Next trigger samples the next segment the specified repeat count, and so on.

**Mixed Sequence Advance:** Each step of a sequence can be programmed to advance either a) automatically (Automatic Sequence Advance), or b) with a trigger (Stepped Sequence Advance).

**Sequencer Steps:** 1 to 4096
**Segment Loops:** 1 to 1Meg
**Minimum Segment Duration:** 500ns
**Multi Sequence:** Selectable sequence from 1 to 10

## DIGITAL PULSE GENERATOR

**Channel Dependency:** Both channels share pulse parameters except level, polarity, delay and state
**Pulse State:** On/Off
**Pulse Mode:** Single or double, programmable
**Polarity:** Normal, inverted or complemented
**Period:** 80 ns minimum, programmed with 4 ns increments
**Pulse Width:** 4 ns minimum
**Rise/Fall Time:**
- DC to 10Vpp: <4ns
- 10Vpp to 16Vpp: <5ns

**High Time:** 0 ns minimum
**Delay:** 0 ns minimum
**Double Pulse Delay:** 0 ns minimum
**Amplitude Window:** 16mVp-p to 16Vp-p
- Low Level: -8V to +7.992V
- High Level: -7.992V to +8V

**NOTES:**

1. All pulse parameters, except rise and fall times, may be freely programmed within the selected pulse period provided that the ratio between the period and the smallest incremental unit does not exceed the ratio of 1,000,000 to 1. With the 2M option, the ratio is extended to 2,000,000 to 1, hence the specifications below do not show maximum limit as each must be computed from the above relationship.
2. Rise and fall times, may be freely programmed provided that the ratio between the rise/fall time and the smallest incremental unit does not exceed the ratio of 100,000 to 1.
3. The sum of all pulse parameters must not exceed the pulse period setting

## DIGITAL PATTERN OUTPUT

**Pattern Size:** 16-bits, LVDS levels differential, channel 1 only
**Update Frequency:** 100µpps to 250Mpps

## COMMON CHARACTERISTICS

### FREQUENCY

**Resolution:** 14 digits (limited by 1µHz)
**Accuracy & Stability:** Same as reference

### 10MHz REFERENCE CLOCK

- Internal: 0.0001% (1 ppm TCXO) initial tolerance over a 19°C to 29°C temperature range; 1ppm/°C below 19°C and above 29°C; 1ppm/year aging rate
- External: 10MHz TTL, 50% ±2% duty cycle

### AMPLITUDE

**Range:** 16mV to 16Vp-p into 50Ω; Double into open circuit
**Resolution:** 4 digits
**Accuracy (1kHz):**
- 16mV to 159.9mVp-p: ±(1% + 5mV)
- 160mV to 1.599Vp-p: ±(1% + 10mV)
- 1.6V to 11.99Vp-p: ±(1% + 70mV)
- 12V to 16Vp-p: ±2%

### OFFSET

**Range:** 0 to ±7.992V, into 50Ω
**Resolution:** 1mV
**Accuracy:** ±(1%+1% of Amplitude +5mV)

### FILTERS

**Type:** 25MHz Bessel
50MHz Bessel
60MHz Elliptic
120MHz Elliptic

### OUTPUTS

#### MAIN OUTPUT

**Connector:** Front panel BNC, each channel
**Impedance:** 50Ω ±1%
**Protection:** Short Circuit to Case Ground, 10s max
**Standby:** Output On or Off (Output Disconnected)

#### SYNC OUTPUT

**Connector:** Front panel BNC
**Level:** TTL
**Sync Type:** Pulse with Arbitrary and Standard Waves; LCOM in Sequence and Burst Modes (including Burst Modulation); Marker with Modulation Mode only, programmable position

#### DIGITAL WORD OUTPUTS

**Connector:** Rear panel SCSI-2, 68-pin VHDC
**Word Width:** 16 bit differential outputs, channel 1 only
**Level:** LVDS

#### SAMPLE CLOCK OUTPUT

**Connector:** Rear panel SMB
**Level:** 400mVp-p
**Impedance:** 50Ω

#### COUPLE OUTPUT

**Connector:** Rear panel SMB
**Level:** LVPECL
**Impedance:** 50Ω, terminated to +1.3V

## INPUTS

### TRIGGER INPUT

**Connector:** Rear panel BNC
**Impedance:** 10kΩ
**Slope:** Positive or Negative (selectable)
**Programmable Level:** ±5V
**Sensitivity:** 100mV
**Damage Level:** ±12V
**Pulse Width:** ≥10ns minimum

### EXTERNAL REFERENCE INPUT

**Connector:** Rear panel SMB
**Frequency:** 10MHz
**Impedance&Level:**
- Default: 10kΩ ±5%, TTL, 50% ±2% duty cycle
- Option: 50Ω ±5%, 0dBm Sinewave (with internal jumper)

### SAMPLE CLOCK INPUT

**Connector:** Rear panel SMB
**Input Level:** 300mVp-p to 1Vp-p
**Impedance:** 50kΩ
**Min. Pulse Width:** 4 ns

### COUPLE INPUT

**Connector:** Rear panel SMB
**Input Level:** LVPECL
**Impedance:** 50Ω, terminated to +1.3V
**Minimum Pulse Width:** 4 ns

## MODULATION

**Carrier Waveform:** Sinewave
**Modulation Source:** Internal
**Inter-Channel Phase:** 90° phase offset between channels
**Run Modes:** Off (Outputs CW), Continuous, Triggered, Delayed Trigger, Burst, Re-trgger and Gated
**Advance Source:** Front panel button, Software commands, Rear panel TRIG IN

# Specification
# 250MS/s Dual-Channel Arbitrary Waveform / Function Generator

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## FM

| | |
|---|---|
| **Carrier Waveform:** | Sine wave |
| **Carrier Frequency:** | 10mHz to 100MHz |
| **Modulating Waveforms:** | Sine, square, triangle, ramp |
| **Modulating Frequency:** | 10mHz to 100kHz |
| **Peak Deviation:** | Up to 50MHz |
| **Marker Position:** | Programmable at selectable a frequency |

## ARBITRARY FM

| | |
|---|---|
| **Carrier Waveform:** | Sine wave |
| **Carrier Frequency:** | 10mHz to 100MHz |
| **Modulating Waveform:** | Arbitrary waveform |
| **Modulating Waveform** | |
| **Sample Clock:** | 1S/s to 2.5MS/s |
| **Frequency Array Size:** | 4 to 20000 frequencies |
| **Marker Output:** | Programmable at a selected frequency |

## AM

| | |
|---|---|
| **Carrier Waveform:** | Sine wave |
| **Carrier Frequency:** | 10mHz to 100MHz |
| **Envelop Waveform:** | Sine, square, triangle, ramp and Arbitrary(TBD) |
| **Envelop Frequency:** | 10mHz to 100kHz |
| **Modulation Depth:** | 0% to 100% |

## FSK

| | |
|---|---|
| **Carrier Waveform:** | Sine wave |
| **Carrier Frequency:** | 100µHz to 100MHz |
| **Baud Rate Range:** | 1bits/sec to 10Mbits/sec |
| **FSK Data Bits Length:** | 1 to 4096 |
| **Marker Output:** | Programmable marker at a selected frequency |

## PSK

| | |
|---|---|
| **Carrier Waveform:** | Sine wave |
| **Carrier Frequency:** | 100µHz to 100MHz |
| **Carrier phase:** | 0 to 359.99° |
| **Baud Rate Range:** | 1bits/sec to 10Mbits/sec |
| **FSK Data Bits Length:** | 1 to 4096 |
| **Marker Output:** | Programmable marker at a selected phase |

## FREQUENCY HOPPING

| | |
|---|---|
| **Carrier Waveform:** | Sine wave |
| **Carrier Frequency:** | 100µHz to 100MHz |
| **Hop Table Size:** | 1 to 4096 |
| **Dwell Time Mode:** | Fixed or Programmable for each step |
| **Dwell Time:** | 200 ns to 21 s |
| **Dwell Time Resolution:** | 20 ns |
| **Hop Frequency:** | 100µHz to 100MHz |
| **Marker Position:** | Programmable on a selected frequency |

## SWEEP

| | |
|---|---|
| **Carrier Waveform:** | Sine wave |
| **Sweep Step:** | Linear, log or Arb |
| **Sweep Direction:** | Up or Down |
| **Sweep Range:** | 10mHz to 100MHz |
| **Sweep Time:** | 1.4s to 40s |
| **Marker Output:** | Programmable marker at a selected frequency. |

## TRIGGER CHARACTERISTICS

### EXTERNAL

| | |
|---|---|
| **Source:** | Rear panel BNC |
| **Trigger Level:** | ±5V |
| **Resolution:** | 1mV |
| **Input Frequency:** | DC to 5MHz |
| **Min. Pulse Width:** | >10ns |
| **Slope:** | Positive/Negative transitions, selectable |
| **Trigger Jitter:** | ±1 sample clock period |

**DELAYS** (Trigger input to waveform output)

| | |
|---|---|
| **System Delay:** | 6 sample clock cycles+150ns |
| **Trigger Delay:** | [(0; 200ns to 20s) + system delay] |
| **Trigger Resolution:** | 20ns |
| **Trigger Delay Error:** | 6 sample clock cycles+150ns +5% of setting |

### INTERNAL

| | |
|---|---|
| **Retrigger Delay:** | 200ns to 20s, Waveform end to waveform restart |
| **Retrigger Delay Error:** | 3 sample clock cycles+20ns +5% of setting |
| **Retrigger Delay Resolution:** | 20ns |

### MANUAL

| | |
|---|---|
| **Source:** | Soft trigger command through the front panel or external interface |

**GATED MODE** External signal enables generator. First output cyclesynchronous with the active slope of the triggering signal. Last cycle of output waveform always comple

### BURST

| | |
|---|---|
| **Waveforms:** | Sine, Triangle, Square, Pulse, Ramp, Sinc (Sine(x)/x), Gaussian Pulse, Exponential Fall, Rising Pulse, Noise, DC. |
| **Counted Burst Cycles:** | 1 to 1Meg, programmable |
| **Source:** | Manual, Internal or External |

## FREQUENCY COUNTER / TIMER

| | |
|---|---|
| **Measurements:** | Frequency, Period, Avaraged Period, Pulse Width and Totalize |
| **Source:** | Trigger Input |
| **Range:** | 10Hz to 100MHz (typically 120MHz) |
| **Sensitivity:** | 500mVpp |
| **Accurcay:** | 1ppm |
| **Slope:** | Positive/Negative transitions |
| **Gate Time:** | 100µSec to 1 Sec |
| **Input Range:** | ±5V |
| **Trigger Modes:** | Continious, Hold and Gated |
| **Period Avaraged** | |
| Range | 10ns to 0.1 Sec |
| Resolution | 7 digits / Sec |
| **Period and Pulse Width** | |
| Range | 200ns to 400 Sec |
| Resolution | 100ns |
| **Totalize** | |
| Range | $10^{12}$-1 |
| Overflow | Led indication |

## MULTI-INSTRUMENT SYNCHRONIZATION

| | |
|---|---|
| **Description:** | Multiple instruments can be daisy-chained together and synchronized to provide multi-channel synchronization. |
| **Initial Skew:** | <15 ns + 1 sample clock cycle, depending on cable length and quality, typically with 1m cables |
| **Waveform Types:** | Standard, Arbitrary and Sequenced using the automatic sequence advance mode only |
| **Run Modes:** | Continuous, Triggered, Gated and Counted Burst |

## LEADING EDGE OFFSET

| | |
|---|---|
| **Description:** | Leading edge offset is programmable for master and slave units. |
| **Run Mode:** | Continuous run mode only |
| **Offset Range:** | 200 ns to 20 s |
| **Resolution&Accuracy:** | 20 ns |

# Specification
# 250MS/s Dual-Channel Arbitrary Waveform / Function Generator

## Model WW2572A



### GENERAL

| | |
|---|---|
| **Power Supply:** | 85 to 265Vac, 48-63 Hz |
| **Power Consumption:** | 60W |
| **Front Panel Display:** | Color LCD, 3.8" reflective, 320 x 240 pixels, back-lit |
| **Operating temperature:** | 0°C - 50°C |
| **Humidity (non-condensing):** | 11°C - 30°C 85%<br>31°C - 40°C 75%<br>41°C - 50°C 45% |
| **Storage temperature:** | -40°C to + 70°C. |
| **Interface:** | Ethernet 10/100, USB 2.0 and GPIB standard |
| **Language:** | IEEE-488.2 - SCPI – 1993.0 |
| **Dimensions:** | 212 x 88 x 415 mm (WxHxD) |
| **Weight:** | Approximately 7 lb |
| **Safety:** | EN61010-1, 2nd revision |
| **EMC:** | CE marked. Designed to meet VDE 0411/03.81 and UL 1244 |
| **Reliability:** | MTBF per MIL-HDBK-217E, 25°C, Ground Benign |
| **Workmanship Std:** | Conform to IPC-A-610D |
| **Supplied Accessories:** | Power Cord, USB cable, CD containing Operating Manual, ArbConnection software and developer libraries. |
| **Warranty:** | 5 years standard |

### MODULATION OPTION

#### ASK

| | |
|---|---|
| **Carrier Waveform:** | Sine wave |
| **Carrier Frequency:** | 100µHz to 100MHz |
| **Start/Shift Amplitude:** | 16mVpp to 16Vpp into 50Ω, Double into open circuit |
| **Resolution:** | Maximum amplitude/4096 |
| **Baud Rate Range:** | 1S/s to 5MSs/s |
| **ASK Data Bits Length:** | 1 to 1k |
| **Marker Output:** | Programmable marker at a selected amplitude |

#### AMPLITUDE HOPPING

| | |
|---|---|
| **Carrier Waveform:** | Sine wave |
| **Carrier Frequency:** | 100µHz to 100MHz |
| **Range:** | 16mVpp to 16Vpp into 50Ω, Double into open circuit |
| **Dwell Time Mode:** | Fixed or Programmable for each step |
| **Dwell Time:** | 200 ns to 21 s |
| **Dwell Time Resolution:** | 20 ns |
| **Resolution:** | Maximum amplitude/4096 |
| **Marker Position:** | Programmable on a selected amplitude step |

#### ARBITRARY 3D

| | |
|---|---|
| **Carrier Waveform:** | Sine wave |
| **Carrier Frequency:** | 100µHz to 100MHz |
| **Modulating Waveform:** | Arbitrary waveform |
| **Modulating Type:** | Amplitude CH1, Amplitude CH2, Frequency and Phase |
| **Modulating Waveform** | |
| **Sample Clock:** | 1S/s to 2.5MS/s |
| **Memory Size:** | 4 to 30k |
| **Phase Range:** | 0 to 359.99° |
| **Marker Output:** | Programmable at a selected step |

#### (n)PSK and (n)QAM

| | |
|---|---|
| **Carrier Waveform:** | Sine wave |
| **Carrier Frequency:** | 1Hz to 75MHz |
| **Carrier Control:** | On/Off |
| **Modulation Type:** | PSK, BPSK, QPSK, OQPSK, PI/4 DQPSK, 8PSK, 16PSK, 16QAM, 64QAM, 256QAM and User Defined |
| **Symbol Rate Range:** | 1S/s to 1MS/s |
| **Carrier Control:** | On/Off |
| **Symbol Period Accuracy:** | ±(500ns + Carrier Period) |
| **Table Size:** | 2 to 4096 |

### ORDERING INFORMATION

| **MODEL** | **WW2572A** |
|---|---|
| 250MS/s Dual-Channel ArbitraryWaveform Generator | |

#### OPTIONS

| | |
|---|---|
| **2Meg:** | 2 Meg Memory |
| **M-Pack:** | Modulation Option |

#### ACCESSORIES

| | |
|---|---|
| **S-Rack mount:** | 19" Single Rack Mounting Kit |
| **D-Rack mount:** | 19" Dual Rack Mounting Kit |
| **Case Kit:** | Professional Carrying Bag |

**Note:** Options and Accessories must be specified at the time of your purchase.