B&K Precision® models 4084, 4085, 4086 and 4087 are high performance laboratory grade synthesized function generators with a wide frequency range of up to 120 MHz. Direct digital synthesis (DDS) techniques are used to create stable, accurate output signals for all 27 built-in standard and complex (arbitrary) waveforms. The generators produce high purity, low distortion sine waves, square waves up to 40 MHz and provide a stable output of very small signals down to the 1mV - 10mV range. The instrument also provides a built-in 100 MHz universal counter with frequency measurement and totalize function.

The versatility and capabilities of this series make it an ideal tool for many general-purpose test and bench applications or for use in training and education.

Versatile modulation and trigger capabilities
The generators provide extensive modulation capabilities including AM, FM, FSK, PSK, pulse modulation and linear/logarithmic sweep. Internal and external modulation sources, as well as internal, external and gated trigger sources are supported. Modulation parameters can be set precisely and are adjustable over a wide range. For instance burst count is programmable in 1 burst increments up to 10000 bursts and burst phase is adjustable in 0.1º increments.

Convenient user interface and operation
You can adjust parameters via knob or numeric keypad. Enter amplitude values directly in Vpp, mVpp, Vrms, mVrms or dBm and display the correct voltage by entering the actual output configuration used (terminated with 50 Ohm or open circuit). You can enter frequency in terms of frequency or seconds using time values s, ms, Hz, kHz or MHz. Submenus are used for modulation modes and other complex functions. The generators are fully programmable via the standard RS232 interface, using SCPI commands. The instrument also provides 10 memories to store and recall instrument settings. Additionally the current state is saved at power off and can be restored at power up.
Specifications

Programmable DDS Function Generator Series
Models 4084, 4085, 4086 & 4087

### Specifications

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</table>

#### Waveform Characteristics

**Main Waveforms** (Sine, Square)
- Amplitude resolution: 12 bits
- Sample rate: 200MSa/s

**DC Accuracy**
- ≤ ±1nS

**Rise and fall time**
- ≤ 1ns

**Others built-in waveforms**
- 27 built-in standard and complex waveforms

**DC signal characteristics**
- DC range: ≤ 10V DC / 0V
- DC Accuracy: ≤ ±3% of setting + 100mV

**Arbitrary**
- Non-volatile memory: 8 waveforms
- Waveform length: 8~16000 points
- Amplitude resolution: 10 bits
- Frequency range: 1µHz~100kHz

**Amplitude Characteristics**

**Amplitude Range**
- For all models: 2Vpp ±20dBm | 1Vpp ±10dBm (50Ω)
- 4084, 4085, 4086: 2Vpp ±20dBm | 1Vpp ±10dBm (50Ω)
- 4087: 2Vpp ±10dBm (50Ω)

**Resolution**
- 2Vpp (open circuit): 0.3µVpp
- 1Vpp (open circuit): 1µVpp

**Accuracy**
- ≤ ±1% of sine wave relative to 1kHz
- Stability: ±0.3% /3 hours

**Flatness**
- For amplitude ≤ 2Vpp: ±3% (frequ 500Hz), ±1% (500Hz < frequ 1kHz)
- For amplitude >2Vpp: ±3% (frequ 500Hz), ±1% (500Hz < frequ 1kHz)

**Output Impedance**
- 50Ω

**Output Units**
- Vpp, mVpp, Vrms, mVrms, dBm

**DC Offset Characteristics**

**Offset Range** (open circuit)
- 2Vpp (open circuit)

**Offset Resolution**
- 1µVpp

**Offset Error**
- ±5% of setting + 10mV (Ampl ≤ 2Vpp into open circuit)
- ±5% of setting + 20mV (Ampl > 2Vpp into open circuit)

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**Inputs/Outputs**

**Main Output**
- Impedance: 50Ω
- Protection: Short circuit and overload protected

**Output MOD OUT**
- Frequency: 100kHz ± 20kHz
- Waveform: Sine, Square, Triangle, Rising/Falling Ramp
- Amplitude: 3Vpp ± 5%
- Output Impedance: 50Ω
- Modulation IN: 3Vpp ± 100% Modulation

**Universal Counter, Key Specs**

**Frequency Range**
- 0Hz – 1kHz
- 0Hz – 100kHz
- 0Hz – 10kHz

**Totalize mode**
- 50MHz max

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**Three-Year Warranty**

In case of warranty issues or inquiries, please contact BK Precision.

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**Included Accessories**
- BNC to alligator cable, BNC to BNC cable, RS232 communication cable, power line cord, test report, spare fuse

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