



# WBK Series Signal Conditioning & Expansion Options

The WaveBook™ family can be expanded with a wide variety of signal conditioning and expansion options. Below are the different categories of options.

## Internal Expansion Boards (WBK11A™, WBK12A™, WBK13A™)

These options install internally into any model of WaveBook or the WBK10A™, and provide simultaneous sampling and filtering. These options do not add channels, they simply enhance the measurement of existing channels.



WBK11A, SS&H card

## External Analog Expansion Modules (WBK10A™, WBK15™, WBK16™, WBK18™)

These options add eight channels of analog input to a WaveBook, and up to eight of these options can be attached to one WaveBook, for a total of 72 analog input channels. Every channel has a separate input amplifier, allowing the WaveBook to scan all channels at its maximum 1 Msample/s rate with no settling time error. Each enabled channel requires a 1 μs measurement period by the WaveBook.



WBK18, 8-channel dynamic signal conditioning module

## External Digital/Analog Expansion Module

The WBK17™ module is capable of measuring frequency, period, position encoder outputs, as well as ±75V inputs on any of its 8 input channels. WBK17 modules can be combined with any of the other WBK modules described above, for a total WaveBook capacity of 72 channels. Unlike other WBK modules, the WBK17 has a digital link back to the WaveBook to transfer acquired data from the counters. The measurement of each enabled channel on the WBK17 requires one 1 μs measurement period from the WaveBook.



WBK17, 8-channel counter/encoder high-voltage module

## External, Single-Channel Attenuators & Probes (WBK61™, WBK62™)

These options attach external to a WaveBook or WBK10A option, and attenuate the input voltage (up to ±1000V) to levels that are measurable by the WaveBook. They do not add channels; they simply enhance the measurement of existing channels. Included with the WBK61 and WBK62 are high voltage probes. Also available are current to voltage converter probes, which clamp onto a wire and attach directly to the BNC voltage inputs on a WaveBook or WBK10A.



The WBK61 and WBK62 attach directly to the WaveBook or the WBK10A

## External Analog/Digital Expansion with On-Board A/D

WBK40™ series options attach to one of the three digital expansion ports on a WaveBook/516E or WBK25. Built into the WBK40 series is a 16-bit, 200-kHz A/D converter, capable of scanning inputs to the module and passing data back to the PC, synchronous with WaveBook measurements. The advantage of these options over other WBK options is that



WBK40, thermocouple input module

they do not consume valuable time slots from the WaveBook's 1 MHz A/D. These are ideally suited to measure slower signals, such as thermocouples, where the 1-MHz sampling of the WaveBook is not required. The WBK40 Series include 14 built-in thermocouple inputs, and can be expanded up to 224 TC channels with the DBK84™ TC input module.

## Multiple WaveBook Systems

The WaveBook/516E™ can accept up to three parallel WaveBooks attached to its expansion parallel ports. Each WaveBook can further be expanded up to 72 channels using the WBK options described above. All together, a system consisting of up to 288 high-speed channels can be attached via one Ethernet link back to the PC. Beyond 288 channels, a PC with multiple Ethernet ports can accept multiple WaveBook systems with virtually an unlimited amount of channel capacity.