

# High-Channel Count Hardware Platform for Desktop and Rack-Mounted Use



## KEY FEATURES

- Desktop instrument or 19" rack-mounted system, 1U high
- AC and DC power supply, multi-range, silent operation, temperature-controlled fan
- Precise synchronization of multiple m+p VibRunner instruments
- DSP powered real-time processing and 1 Gbit/s Ethernet host interface
- Up to 24 analog input channels, 24 bits, 204.8 kHz max. sampling rate per channel, voltage, IEPE, bridge sensor conditioning
- Tacho inputs, source channels with emergency shutdown, digital I/O

m+p VibRunner is our measurement hardware platform for higher channel counts, designed for the specific needs of noise and vibration engineering and general data acquisition such as strain and temperature measurements. This solution-oriented approach provides superb performance at an excellent price-performance ratio.

The hardware platform is ideal for projects such as engine test cells, where high data throughput is important; large structures where distributed inputs reduce sensor cabling; large channel count requirements such as sensitive satellite pre-flight testing; or simply where a wide range of testing needs demand the ultimate flexibility in test system configuration.

It integrates seamlessly with our m+p VibControl, m+p Analyzer and m+p Coda software products.

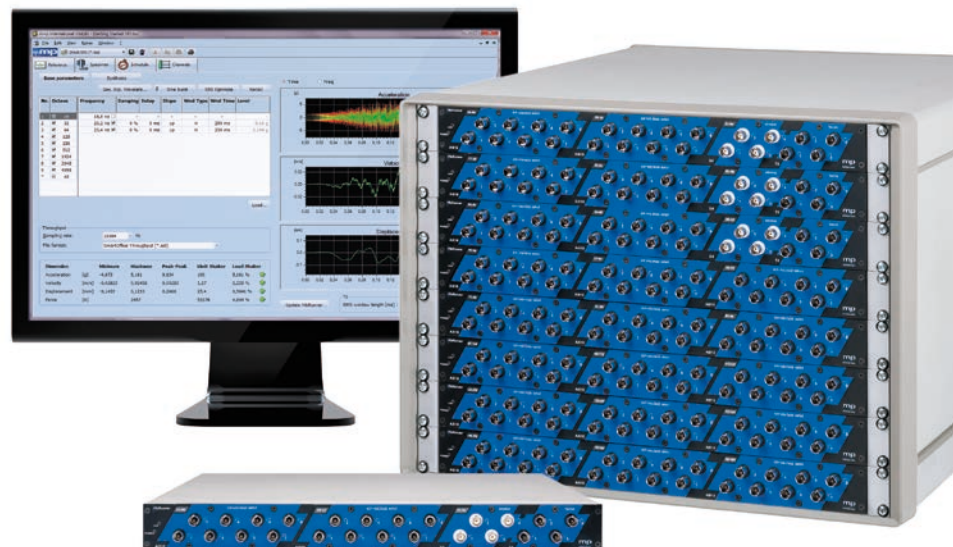
### Desktop or Rack Mounted

m+p VibRunner provides maximum modularity. The basic unit is a 19" mainframe that houses up to three front-mounted functional modules. The 1U mainframe can be equipped with feet for use as a desktop instrument or with mounting brackets for 19" rack mounting.

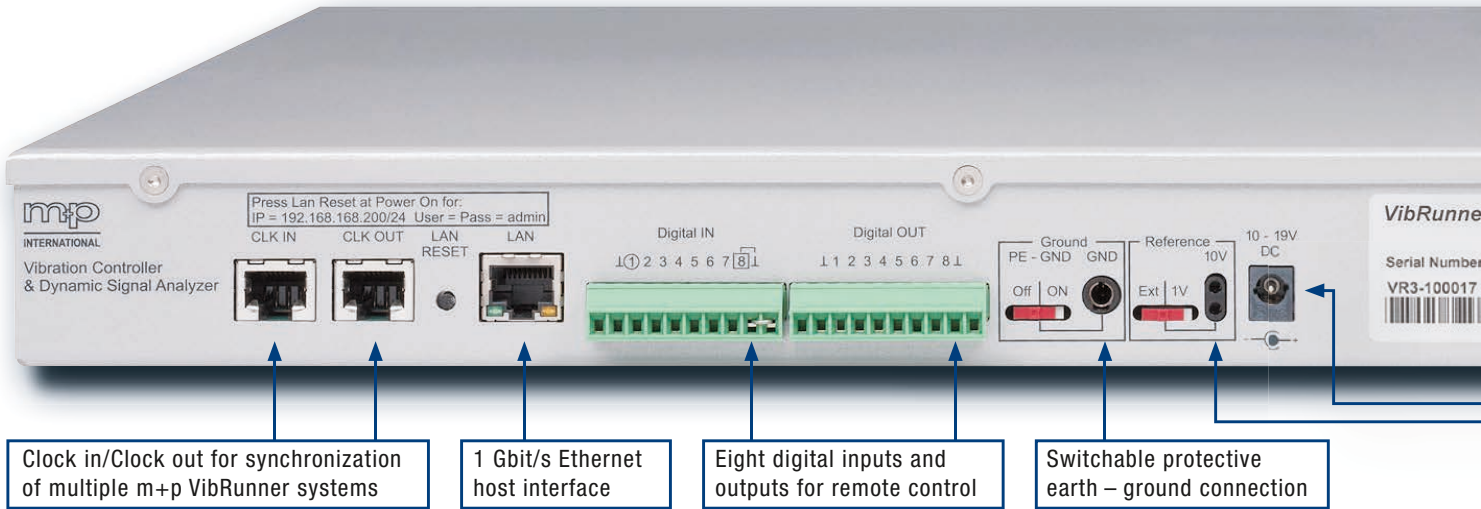
m+p VibRunner is equipped with multi-range AC and DC power supply. Cooling is performed by a high-quality, silent fan whose speed is temperature-controlled. For sensitive noise measurements the fan can be turned off from the host PC.

### Scalability and Synchronization

For applications requiring a high number of measurement channels, data acquisition over multiple m+p VibRunner systems will be exactly synchronized. This is made possible by making the master clock available to all slave mainframes. For measurements of large objects, the m+p VibRunner systems can be placed close to the measuring points which minimizes costly transducer cabling.



Configure m+p VibRunner to your precise needs.



Clock in/Clock out for synchronization of multiple m+p VibRunner systems

1 Gbit/s Ethernet host interface

Eight digital inputs and outputs for remote control

Switchable protective earth – ground connection

**Digital Inputs/Outputs**

Each instrument has a digital interface with 8 inputs and 8 outputs (5 V TTL). These inputs/outputs enable engineers to directly execute control functions for combined environmental tests or for parallel functional tests of the specimen.

The 8-channel bridge module enables experimental stress analysis and structural testing. It contains quarter-, half-, and full-bridge support. The built-in bridge excitation and completion is individually programmable for each channel, thus making time-consuming hardware re-configuration of different gauge types unnecessary.

**Power of Ethernet**

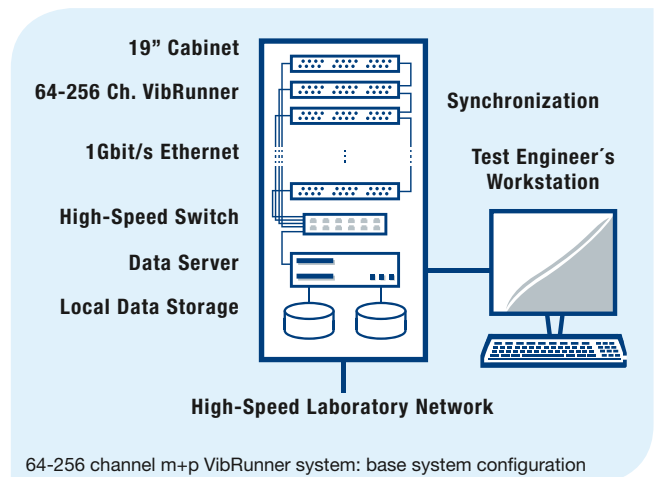
The 1 Gbit/s Ethernet interface is used for communications with the host PC. To ensure safe and fast communication even with many input channels, the m+p VibRunner hardware is integrated into its own, independent subnet. High channel counts increase the required data rates considerably, but m+p international's choice of the Ethernet standard means that the host PC system can be configured using common off-the-shelf technology, including very powerful server systems.

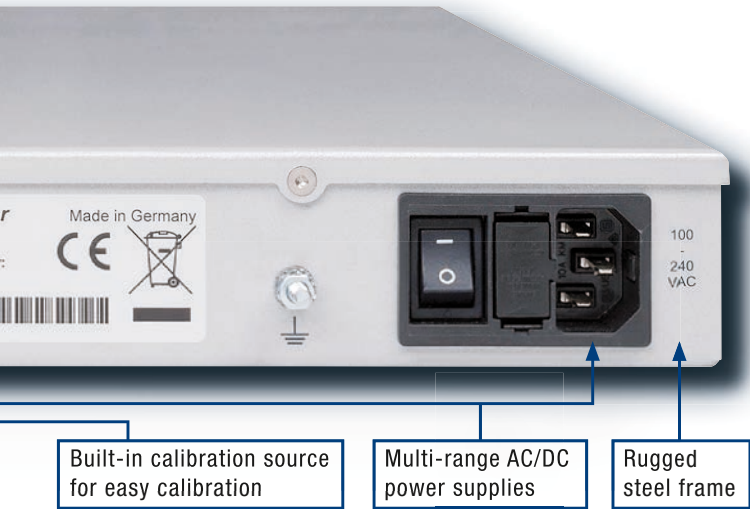
**Output Channels**

Additional m+p VibRunner modules provide analog outputs for vibration testing or modal analysis applications requiring a drive signal for the shaker. And here again, m+p VibRunner is optimally tuned to meet the specific requirements: high-precision 24-bit D/A converters are sampled by the master clock in the same way as the A/D converters on each input to ensure the excellent phase stability of the measurements. In case of emergency (for example, at power failure or when the connection to the host PC is lost), the source signal will be ramped down in a controlled manner to avoid damage to the specimen or the test equipment. This automatic, analog shutdown circuitry guarantees the highest safety possible during the test.

**Input Channels**

m+p VibRunner provides high-precision measurement capability and outstanding real-time performance. With 24-bit sigma-delta A/D converters with up to 204.8 kHz sampling rate, it allows for alias-protected measurements in a frequency range up to 80 kHz and more than 120 dB spurious-free dynamic range. Input ranges are selectable from 100 mV to 20 Vpk, low noise and selectable high-pass input filtering allow for versatile acoustic measurements and pyro-shock capture. The input channels can be switched between single-ended and full differential mode, thus allowing potential-free measurements such as those required on bridge circuits. TEDS (Transducer Electronic Data Sheet) support is a time-saving tool to automatically enter information stored in the transducer, e.g. sensitivity, calibration and serial number. Operators can individually switch the IEPE power supply for every input channel.





The 24-channel m+p VibRunner front-ends are installed in a 19" cabinet to make up a 256-channel data acquisition system.

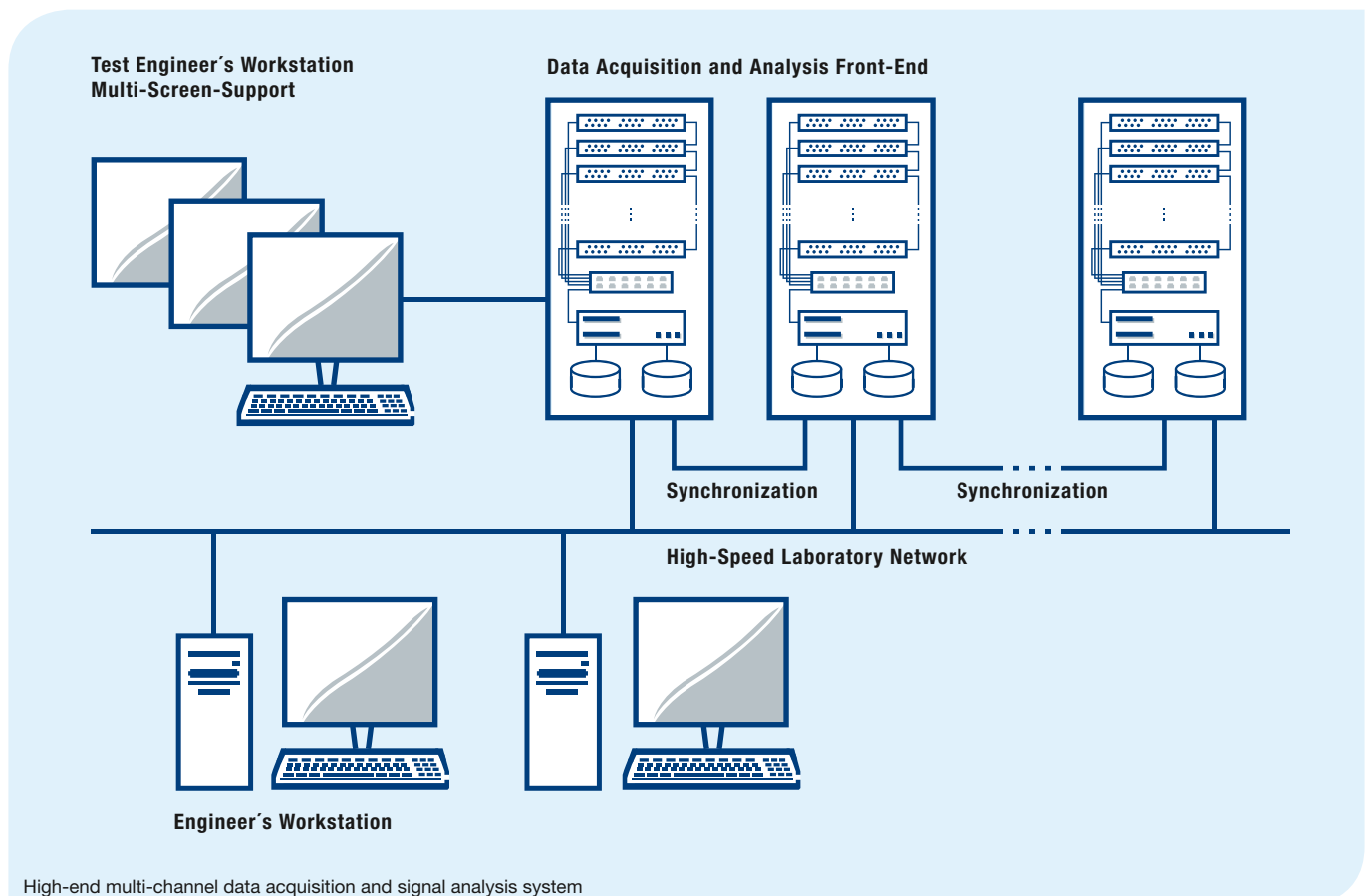
For high-speed data processing and continuous data recording, a powerful data server is supplied with the data acquisition system. This data server can be equipped with terabyte disc storage to guarantee high-speed recording and fast data access.

If even higher channel counts are required, e.g. for sophisticated aerospace testing applications, several systems can be combined. The measurement systems can be placed close to the measuring points and be synchronized over several hundred metres, thus minimizing transducer cabling and increasing flexibility of the test system configuration.

Independent of how many data acquisition cabinets are used for a test setup, all channels are handled using a transparent and consistent data model. This ensures access to all input channels during setup, online monitoring and post-test analysis, no matter on which hardware unit within the network the channel is located.

### High-End Solutions for Data Acquisition and Signal Analysis

Based on our powerful software platforms we offer m+p VibRunner hardware configurations tailored to the specific needs of high-performance and multi-channel measurement applications.



High-end multi-channel data acquisition and signal analysis system



## **m+p international**

Founded in Hannover, Germany in 1980, m+p international develops and manufactures test and measurement systems for vibration control, dynamic signal analysis, data acquisition, process monitoring and test stand engineering. Our product reputation and broad experience coupled with valuable user feedback have led to significant market share in numerous key industries worldwide.

The company has its headquarters in Hannover, Germany with sales/marketing subsidiaries in New Jersey (USA), England, France and China, along with representatives and agents in many countries.

Learn more on the full range of m+p international products and services and their applications. Select the m+p literature library on our website:  
[www.mpihome.com/en/literature-library.html](http://www.mpihome.com/en/literature-library.html)

m+p VibControl, m+p Analyzer, m+p Coda, m+p VibPilot, m+p VibRunner and m+p VibMobile are products of m+p international.

All trademarks and registered trademarks are the property of their respective holders.

Specifications subject to change without notice.

### **Germany**

**m+p international**  
**Mess- und Rechnertechnik GmbH**  
Thurnithstraße 2  
30519 Hannover  
Phone: (+49) (0)511 856030  
Fax: (+49) (0)511 8560310  
sales.de@mpihome.com

### **USA**

**m+p international, inc.**  
271 Grove Avenue, Bldg. G  
Verona, NJ 07044-1705  
Phone: (+1) 973 239 3005  
Fax: (+1) 973 239 2858  
sales.na@mpihome.com

### **United Kingdom**

**m+p international (UK) Ltd**  
Mead House  
Bentley, Hants  
GU10 5HY  
Phone: (+44) (0)1420 521222  
Fax: (+44) (0)1420 521223  
sales.uk@mpihome.com

### **France**

**m+p international Sarl**  
5, rue du Chant des Oiseaux  
78360 Montesson  
Phone: (+33) (0)130 157874  
Fax: (+33) (0)139 769627  
sales.fr@mpihome.com

### **China**

**Beijing Representative Office  
of m+p international**  
Room 1006, Jin Ma Office  
Building B Seat  
Xue Qing Road No. 38  
Hai Dian District, Beijing  
Phone: (+86) 10 8283 8698  
Fax: (+86) 10 8283 8998  
sales.cn@mpihome.com

**ISO 9001  
CERTIFIED**

**m+p**

**INTERNATIONAL**

*listens to customers ...*

[www.mpihome.com](http://www.mpihome.com)