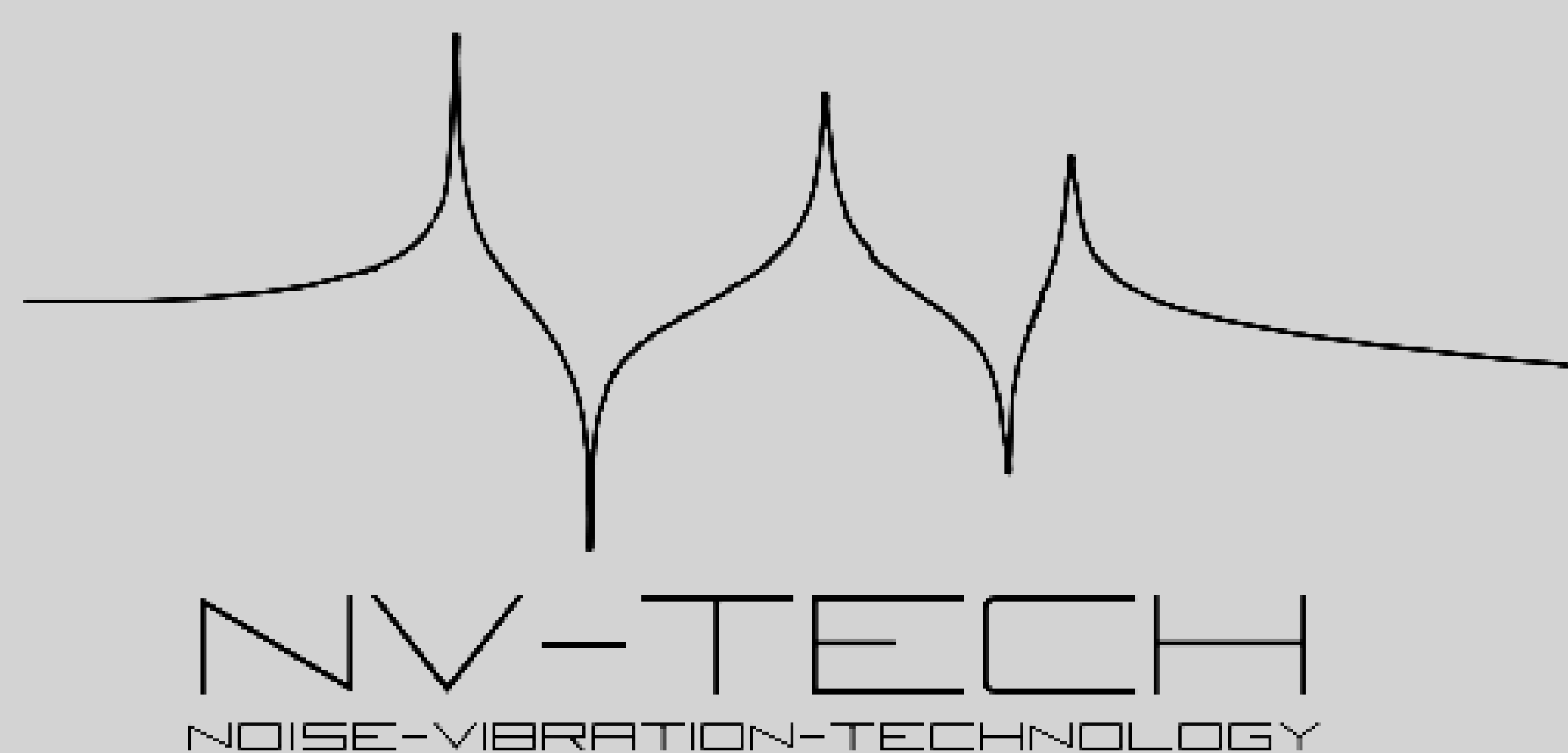
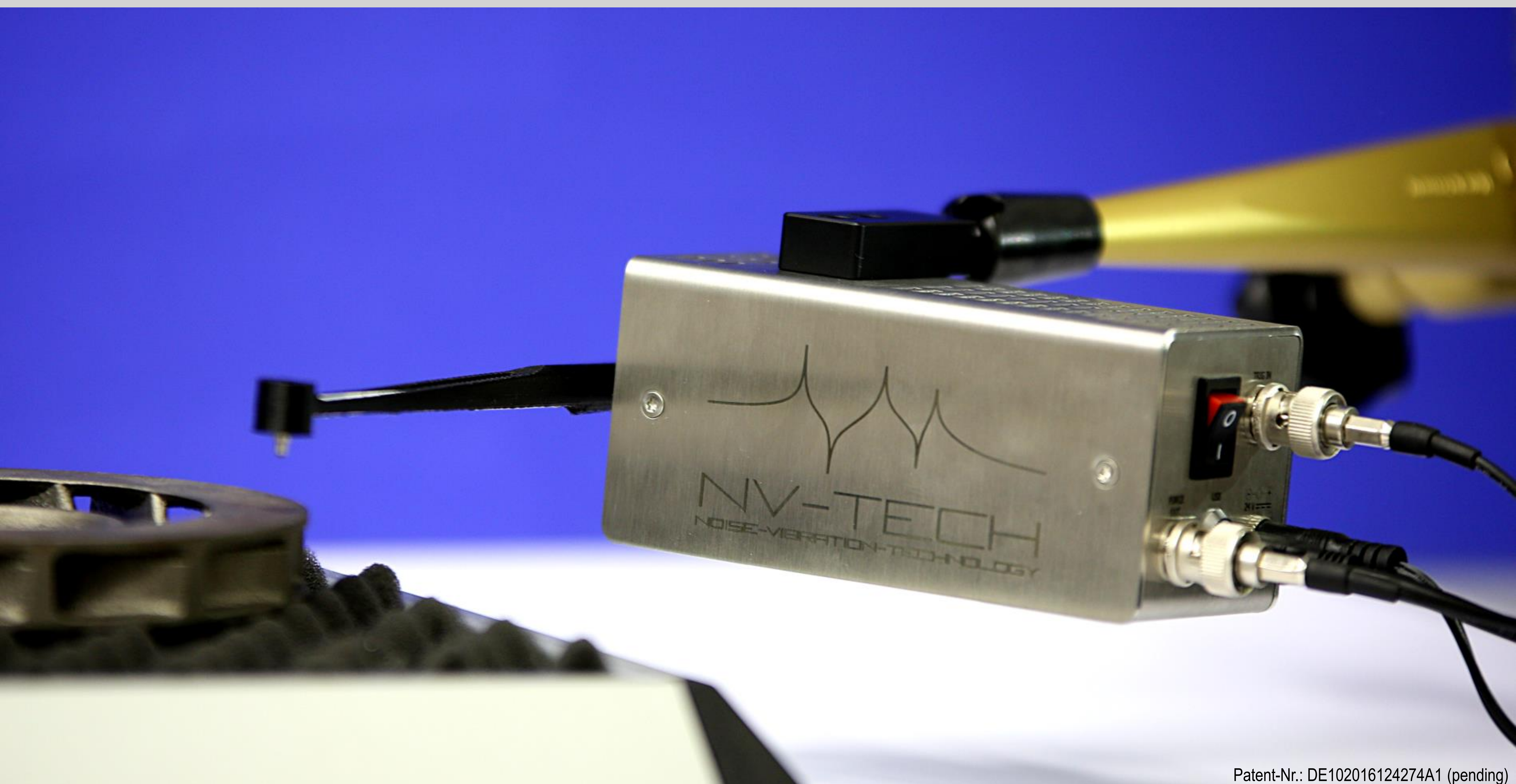


# NV Tech Design

## Scalable Automatic Modal Hammer

for structural dynamic measurements and modal analysis

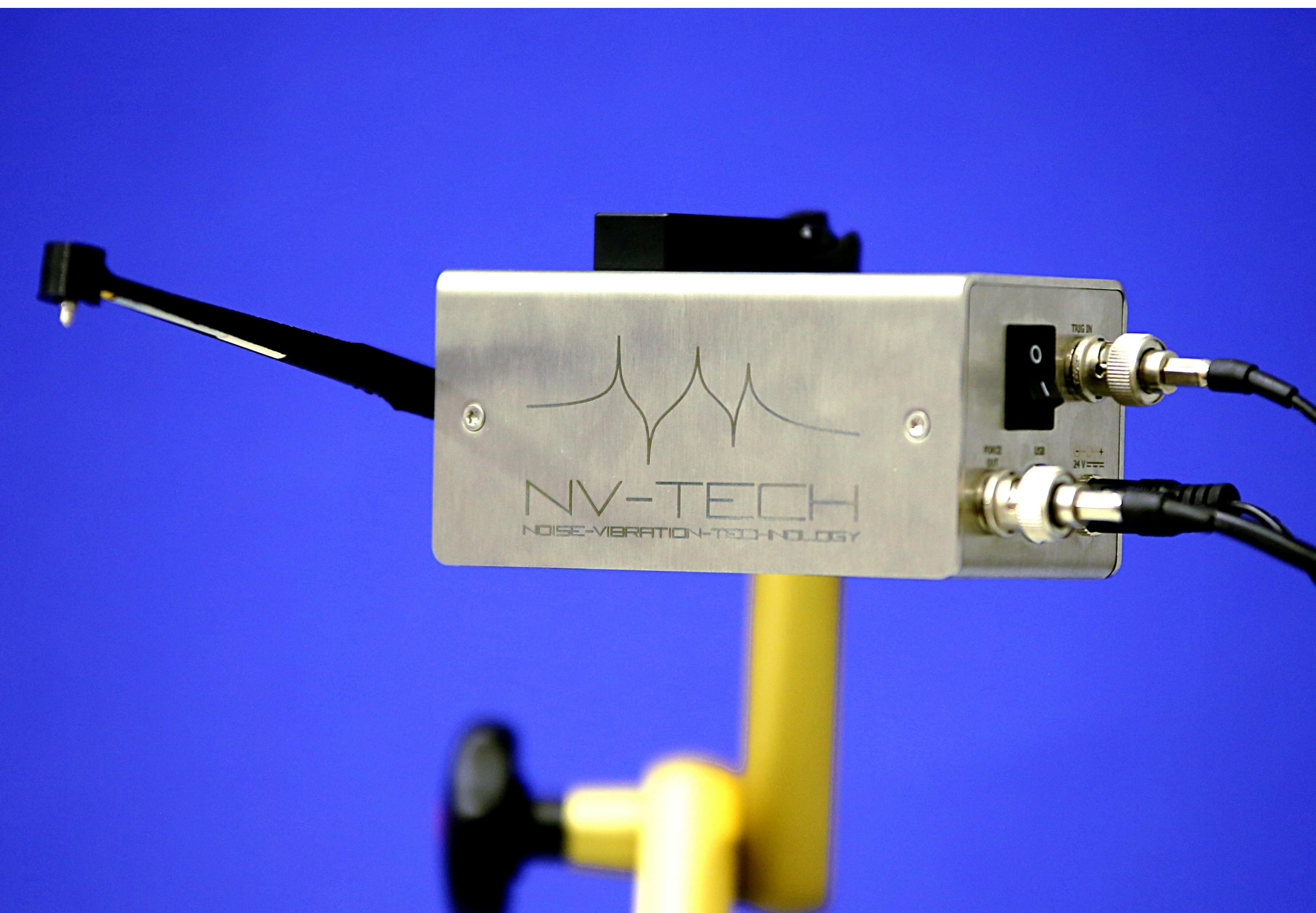
### Datasheet





# Scalable Automatic Modal Hammer 1 (SAM1)

## Technical Specifications



### Accessories:

- 1 extra cylindrical mass
- 1 vinyl impact tip cover, red
- 1 sensor adapter with 2x M4 bolts and 2x M4 nuts DIN 934
- 1 48W power supply
- 1 USB cable, mini-USB to USB-A plug
- 1 flexible measurement stand (400 mm) with magnetic foot and SAM adapter
- 1 remote control
- 1 robust transport case

### Sensor specifications

Basic data	Imperial	SI	
Sensitivity ( $\pm 20\%$ )	100 mV/lbf	22.5 mV/N	[1]
Measurement range	50 lbf (pk)	222 N (pk)	
Resonant frequency	> 100 kHz		
Non-linearity	< 1%		[3]

#### Technical characteristics

Excitation voltage	20 ... 30 VDC	
Constant current excitation	2 ... 20 mA	
Output impedance	< 100 $\Omega$	
Output bias voltage	8 ... 14 VDC	
Discharge time constant	> 100 s	

#### Physical characteristics

Sensing element	Quartz	
Sealing	Epoxy	
Hammer tip mass	0.17 oz	4.8 gramm [2]
Hammer tip head diameter	0.25 in	6.3 mm
Hammer tip diameter	0.10 in	2.5 mm
Hammer length	4.2 in	107 mm
Electrial connection position	side	
Extender mass weight	0.044 oz	1.25 gramm [2]

### Product notes

- [1] - steel tip with no extender mass, exact numbers in calibration sheet  
[2] - with plastic handle attached  
[3] - typical

### Excitation motor specifications

Basic data	
Interface	USB
Technical characteristics	
Supply voltage	9 ... 28 VDC
Trigger input voltage	5 VDC
Limited motor current	2 A
Max. holding torque	0.70 Nm
Max. radial force	28 N

All specifications are given at room temperature unless otherwise specified.

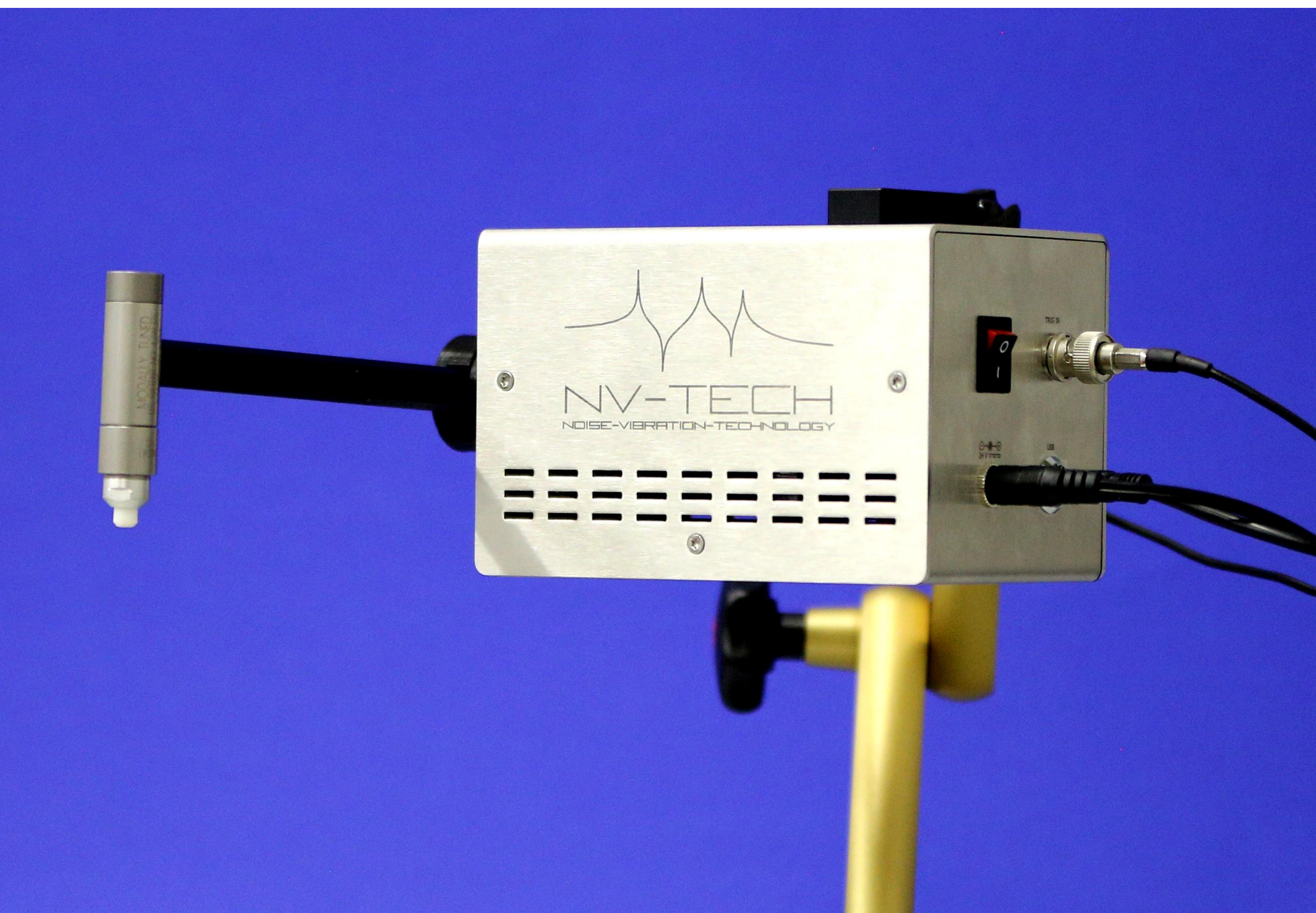
In the interest of constant product improvement, NV Tech Design GmbH reserves the right to change specifications without prior notice.





# Scalable Automatic Modal Hammer 3 (SAM3)

## Technical Specifications



### Accessories:

- 1 extra cylindrical mass
- stainless steel, rubber, vinyl and Nylon impact tips.
- 1 sensor adapter with 2x M4 bolts and 2x M4 nuts DIN 934
- 1 48W power supply
- 1 USB cable, mini-USB to USB-A plug
- 1 flexible measurement stand (400 mm) with magnetic foot and SAM adapter
- 1 remote control
- 1 robust transport case

### Sensor specifications

Basic data	Imperial	SI
Sensitivity ( $\pm 20\%$ )	10 mV/lbf	2.25 mV/N [2]
Measurement range	500 lbf (pk)	2224 N (pk)
Resonant frequency	> 22 kHz	
Non-linearity	< 1%	

#### Technical characteristics

Excitation voltage	20 ... 30 VDC	
Constant current excitation	2 ... 20 mA	[1]
Output impedance	< 100 $\Omega$	
Output bias voltage	8 ... 14 VDC	
Discharge time constant	> 2,000 s	[1]

#### Physical characteristics

Sensing element	Quartz	
Sealing	Epoxy	
Hammer tip mass	0.34 oz	160 gramm
Hammer tip head diameter	0.62 in	15.7 mm
Hammer tip diameter	0.25 in	6.3 mm
Hammer length	8.5 in	216 mm
Electrial connection position	Bottom of handle	
Extender mass weight	0.044 oz	75 gramm

### Product notes

- [1] - steel tip with no extender mass, exact numbers in calibration sheet.  
[2] - Sensitivity data may vary if other hammer models are attached to the SAM3.

### Excitation motor specifications

Basic data	
Interfaces	USB

#### Technical characteristics

Supply voltage	10 ... 30 VDC, 24 VDC nominal
Trigger input voltage	5 VDC
Limited motor current	2 A
Max. holding torque	3.10 Nm
Max. radial force	2200 N

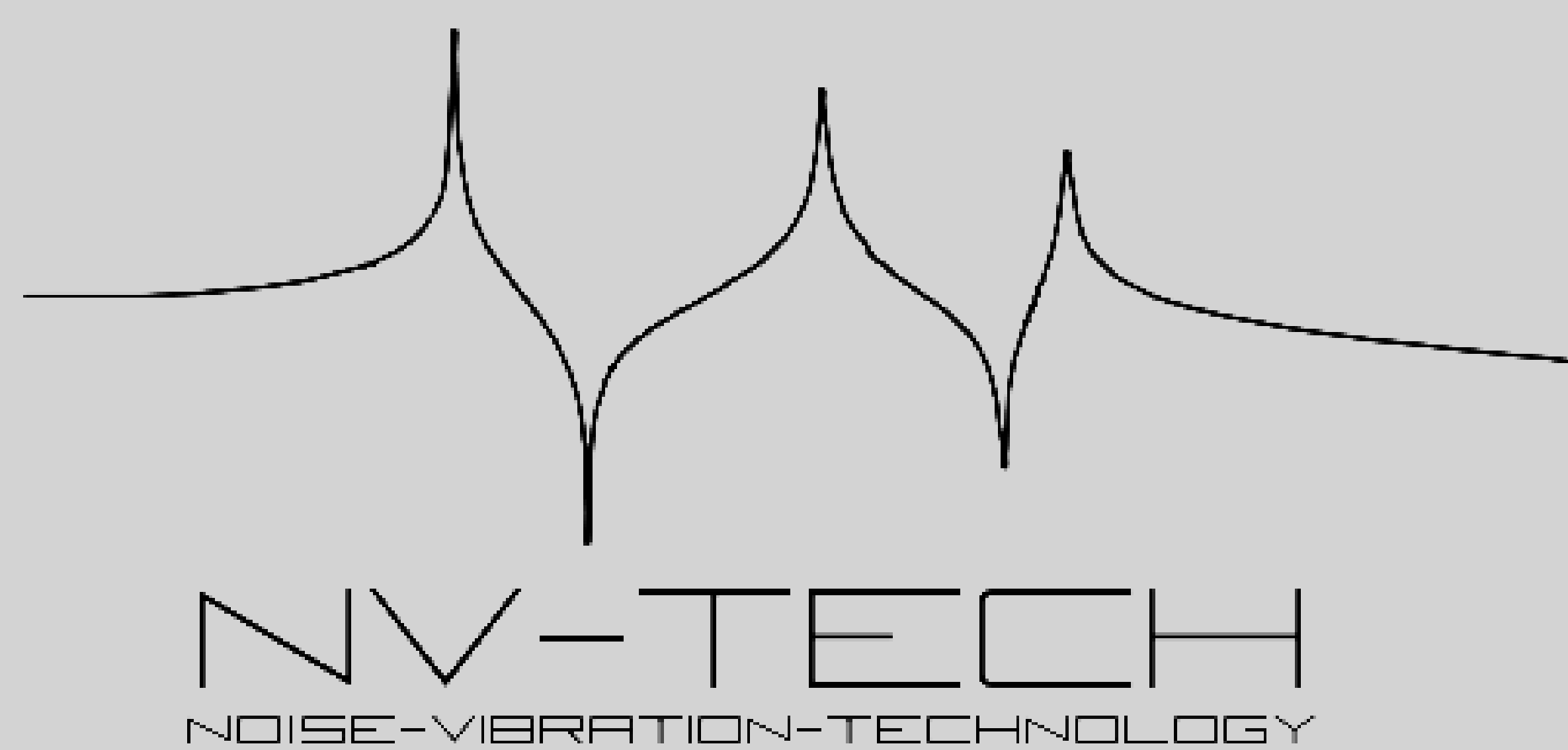
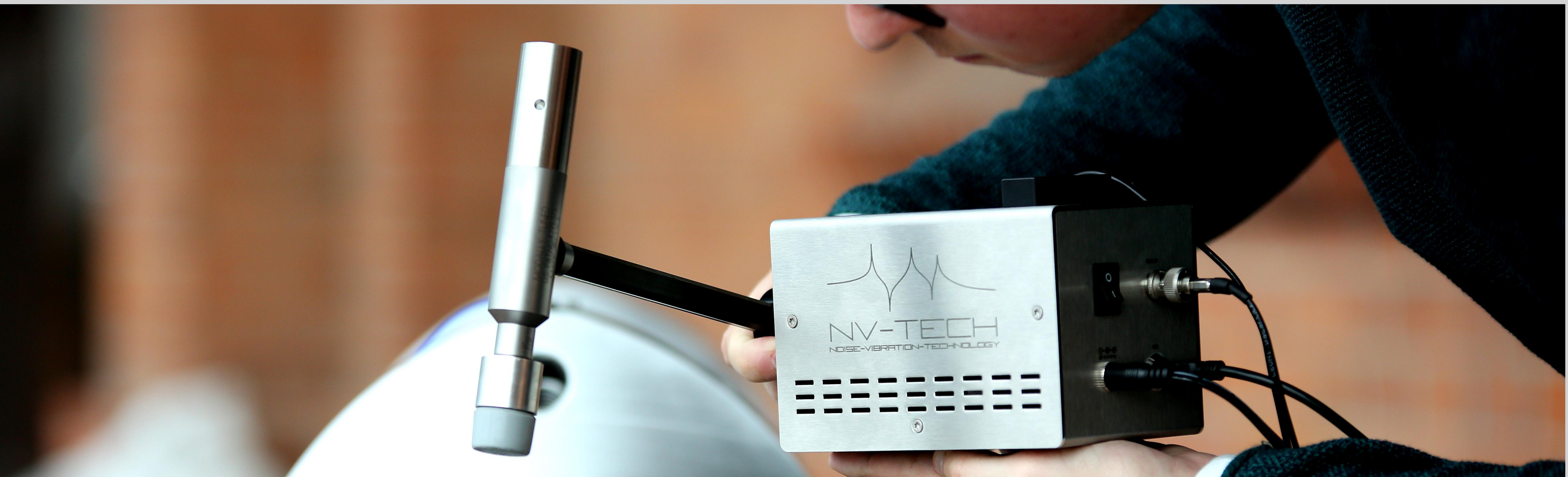
**Upon request**, the SAM3 can be instrumented with heavier modal hammers for impact amplitudes of up to 22 kN.

All specifications are given at room temperature unless otherwise specified.

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Prof. Dr. Peter Blaschke, +49 152 267 60 478, [info@nv-tech-design.de](mailto:info@nv-tech-design.de)  
NV Tech Design GmbH, Paul-Lincke-Weg 10, 71711 Steinheim, Germany  
For more information please visit [www.nv-tech-design.de](http://www.nv-tech-design.de)

