

Mattress Mat Dev Kit v1.9

Everything you need to start experimenting
with our Bedding Mat Platform



Data Sheet

What is the Bedding Mat Platform?

The Bedding Mat is a branch based on the Sensing Mat Platform by Sensing Tex and developed to take advantage of the collected pressure mapping on beds. The Bedding Mat Platform is an end-to-end solution to design smart connected products to collect data, recognize patterns and trigger actions based on the stretchable printed electronic technology patented by Sensing Tex.



Why choose our bedding solution?

A new way of meeting customer expectations

- The market looks for new technologies applied for proximity, touch and force interaction to provide **customized solutions to monitor patterns and behaviors.**
- Companies aim to innovate creating cost-effective solutions to **increase sales, reduce costs and provide added value to the end customer.**
- The market looks for new technologies applied for **proximity, touch and force interaction** to provide customized solutions to monitor patterns and behaviors.



Customizable Dev Kits

- Customizable solution to recognize patterns based on the pressure maps collected from the stretchable sensor mat in order **to design and manufacture end-to-end bedding applications for all sectors.**
- It allows the user to **test the potential of the Sensing Mat Platform and identify suitable requirements** to customize it to fulfill final product expectations.
- The Dev Kit **comes with all the elements** (Sensing Mat, Electronic Module, Demo Software for analytics and Accessories) required **to start using it.**



Customer Support and Guidance

- **We will guide you throughout the process** of understanding how the Platform provides a differential value to your final product.
- We **include the basic support** to let you know how the Dev Kit works as well as assistance in using it to identify the suitable & essential requirements to customize the platform in order to build your desired product. This is part of our own methodology called **Sensing Mat Adoption Guide.**

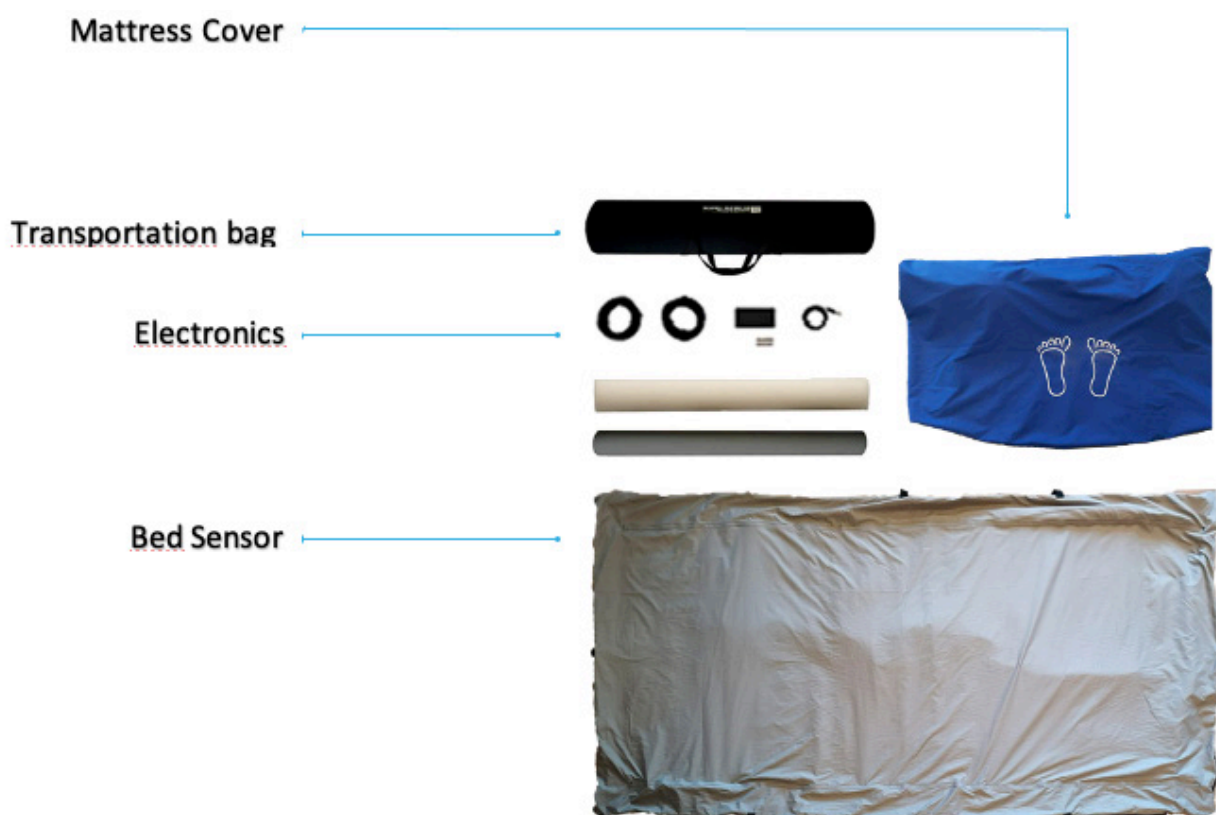
About the Mattress Mat Dev Kit

The **Mattress Mat Dev Kit** has been set up to provide **all the required hardware and software** elements **to design bedding products** to fulfill the client needs applying its features to the wellness and healthcare sectors.

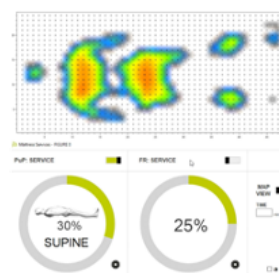
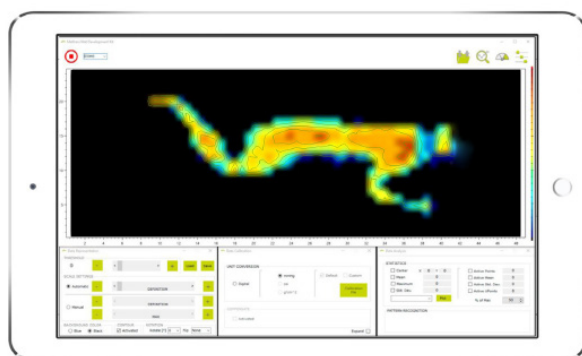
Based on the Dev Kit, many applications can be developed such as **remotely monitor presence postures or movement of a patient on the bed, evaluate patient comfort, identify pressure risk areas, track sleep quality** by monitoring biosignals, postures or movement or recommend, in a point of sales, the most suitable mattress to fulfill customer sleeping needs.



Elements included



Warning: Actual products may differ in design and colors



Demo Software

- Real-time data visualization
- Human pattern recognition
- Engineering service support

We provide a demo software for testing the product. This software can be fully customizable for you in order to reach your specific needs. It is also available engineering service support to define your final product.

Main features

1. Sensing Mat features

A. Size and Topology Features

Overall Size [mm] [L x W]	2100 x 940
Sensing Area [mm] [L x W]	1890 x 850
Number of Sensels	1,056
Topology [R x C x #]²	48 x 22 x 1
Horizontal & Vertical Resolution [mm]	40.0
Sensor Shape and Size [mm]	Round 10.0 diameter
#Sensor Modules	01
Sensor Module Matrix [C x R]	48 x 22

B. Pressure Sensing Features

Linearity	Yes Conductance vs Pressure (2 curves)
Hysteresis	12%
Repeatability	<8%
Raising Time	<5%
Precision	10%
Drift	<12% Model for Correction
Pressure Range	5-350 mmHg



2100 x 940 mm Overall Size



1890 x 850 mm Sensing Area



1056 Sensors



Sensing Mat and Cover

2. Textile cover features

Mass PES [g/m²]	180 [+/-10]	ISO 3801/5 1977
Coating mass PU [g/cm²]	75 [+/-5]	ISO 3801/5 1977
Water resistance before washability	Ok: 2000 mm	ISO 811 1981
Water resistance after washability	Ok: 2000 mm	ISO 811 1981
Inflammability [Crib 5]	Ok	BS 7175 1989
Breathability [g/m²]	400 g/m ² /24h 37°C/65%HR	
Mold and mildew resistance	Ok	

3. Electronic hardware features

A/C circuit	With module multiplexing for Cross-talk reduction and fast processing
Compatibility	Windows, Linux, osX, IOT, Android
Resolution	12 bits
Scanning frequency [Hz]	Up to 8
Connectivity	Bluetooth Classic/BLE, WIFI and USB Serial (24/7). Connector Power: Textile micro-USB
Battery	No



USB 2.0



USB powered



Bluetooth Classic/BLE,
WIFI and USB Serial
(24/7)



Up to 8 Hz Scanning Frequency

4. Software & Firmware system

- Demo software to see pressure mapping in real time.
- CSV exportation data.
- Real-time pressure maps recording and display.
- Graphical display of variables.
- Demo code for developers.
- Easy-to-use software.
- Software gives independent pressure values for each sensor pixel, without cross-talk affectation.
- Software for Windows: New Sensing Mat Analytics Software 1.9



Basic Demo Code and
Mattress Mat Developer
Guide



Technical Support and
Guidance



Multi OS Platforms Compa-
tible



Demo Software for Windows

5. Sensor mat diagram

- Matrix: 22 x 48
- Distance between sensors centres: 40 mm
- Single sensor diameter: 10 mm

