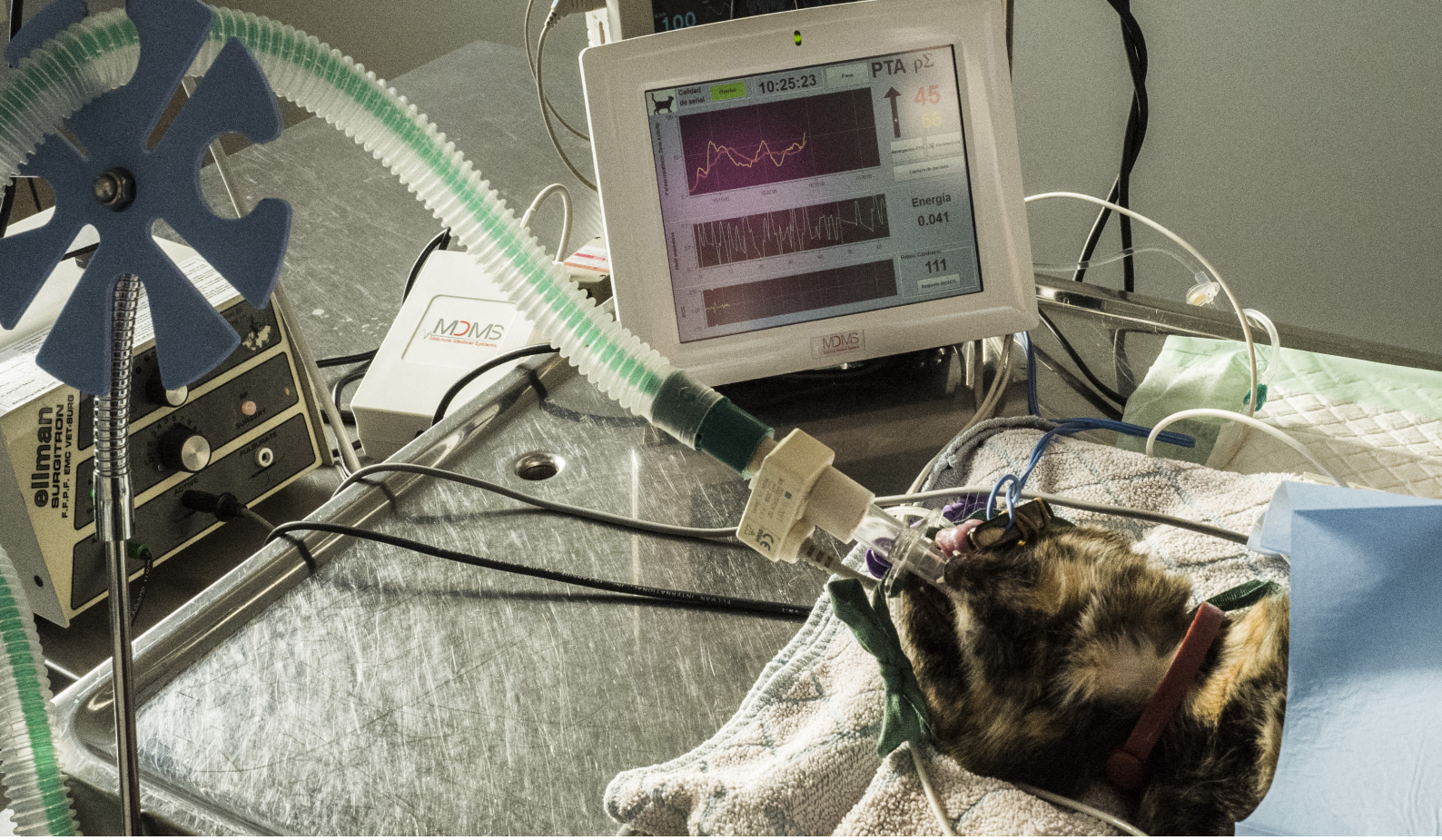
MDMS
Mdoloris Medical Systems

Product Brochure

PTA

When Innovation beats Pain.

"Finding an objective pain monitoring is an increasing need during the perioperative time. Measuring the parasympathetic tone can help clinicians to deal with it."



The FIRST parasympathetic tone monitoring DEVICE in the WORLD for PETS.

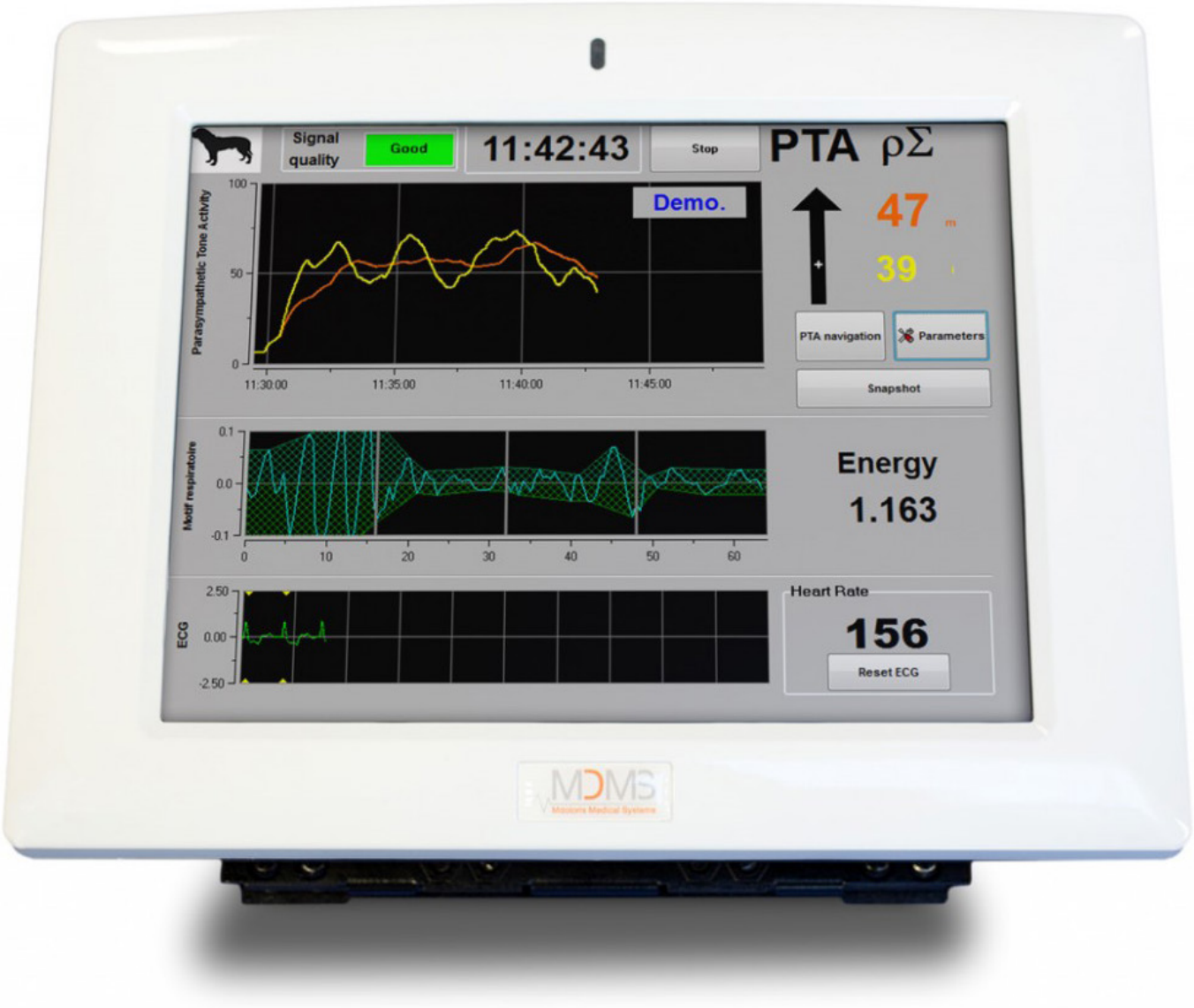
Physiological mechanisms related to nociception and to its removal, are located at different subcortical levels. That's why, it was necessary to move research towards a way of analyzing the autonomic nervous system tone (sympathetic and parasympathetic activities). The purpose of MDMS is to provide to doctors a non invasive, easy to use and to read monitoring system which offers a continuous and reliable index. This is why it is the access to the autonomic nervous system (ANS) through the ECG (ElectroCardioGram) which has been selected.

Behavioral rating scales models are widely biased by their subjectivity and by the clinical context, which inhibits the behavioral response of the animal.

The challenge for veterinarians is to assess objectively the pain experienced by the animal, especially during surgery. The PTA technology (Parasympathetic Tone Activity) allows an optimal management of analgesia particularly during surgery, that therefore induces a better revival and facilitates the animal recovery.

PTA
Parasympathetic Tone Activity

Following the results of the ANI technology (analgesia nociception index) on the monitoring of non-communicating patients, an adaptation of the algorithm was performed to develop the PTA index (Parasympathetic Tone Activity). The PTA technology enables the evaluation of the parasympathetic part of the autonomic nervous system of animals (from the electrocardiogram retrieved by sensors (clips).



Why assessing PAIN and COMFORT?

The PTA index provides an objective value to veterinarians to evaluate analgesia. The PTA monitor offers a value between 0 and 100 corresponding to the activity of the parasympathetic part of the autonomic nervous system of the animal. The higher the value of the PTA index is the higher the animal's comfort is.

In animals, the expression of pain is behavioral in the absence of clear verbal communication. Behavioral rating scales models have been developed but these tools have two major limitations: a probable anthropomorphic idea is not perfect and intraoperative anesthetic context inhibits the behavioral response of the animal.

The pain is now considered as a symptom and must be managed in a proportionate manner in relation to the potential side effects. The challenge for veterinarians is to assess objectively the pain felt by the animal during surgery and adapt the analgesic treatment individually. Better management of pain during the operation could allow an awakening in better conditions for the animal. We developed a heart rate variability analysis device simple of use, not operator-dependent, based on the acquisition of electrocardiographic (ECG) signal. We have already been able to develop specific indexes for three animal species: an application for cats, one for dogs and one for horses.

Benefits

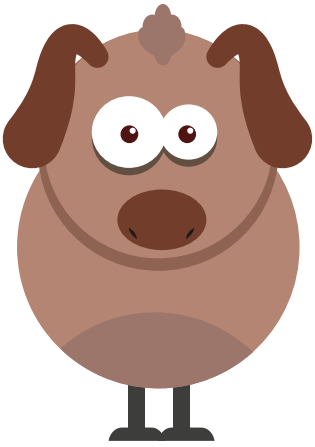
The PTA index can be used to monitor animals' comfort at the end of the surgery and anticipate painkillers needs before his awakening. The assessment of pain in animals is not easy and it would be simpler to administer all animals a standard dose of painkillers. This is an inappropriate treatment of pain which should be avoided.

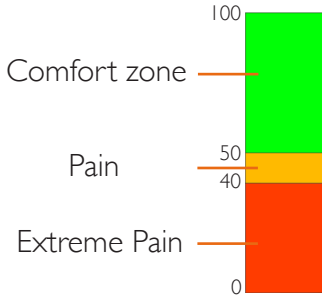
Titrate opioids avoiding infra and overdosing

Predict haemodynamic reactivity

Diagnose the etiology of the haemodynamic event

Predict postop pain





http://fr.freepik.com/vecteurs-libre/vecteurs_717785.htm

PTA Monitor Specifications

General

Parameter	Specification
Power Requirements	100-240 VAC through AC power adapter
Main Frequency	50/60 Hz
AC Power consumption	
Battery Type	Lithium-ion
DC Input	12V+/- 5% 60W

Environmental

Parameter	Specification
Cooling Method	Convection. Fan less
Temperature Operating Storage	 5°C to 30°C -20°C to 60°C
Humidity Operating Storage	 >15% and <95% non-condensing >15% and <95% non-condensing
Altitude Operating Storage	 360 to 800 mmHg 360 to 800 mmHg
Dimensions Monitor Acquisition Device	 235 x 185 x 42 mm 157 x 103 x 68.5 mm
Weight Monitor Acquisition Device	 1,86 Kg 0,35 Kg
Finish Monitor Acquisition Device	 Front : white Back : black White

Display

Parameter	Specification
Type	Color Liquid Crystal
Size	200 mm (8 inches)
Resolution	800 x 600 pixels
Active Viewing Area	173 x 130 mm
Pixel pitch	0.216 x 0.217 mm

Output

Parameter	Specification
Export Protocol	UART interface
Data Export	USB interface

Connector

Parameter	Specification
AC Input (monitor)	Jack DC 3-pin power connector
Acquisition Device (monitor)	Sub-D9 connector to provide power and communication to Acquisition Device
Export (monitor)	Sub-D9 connector to export data in real time
Data Export (Monitor)	USB connector to export data and snapshot to USB stick
Sensor cable (Acquisition Device)	6-pin female connector
	6-pin male connector
	3 bananas connector
Sensor (Acquisition Device)	3 bananas connector

MDMS
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