

MR-compatible Monitoring and Gating System for Veterinary use

Monitoring

- Fiber Optic ECG
- Respiration
- Fiber Optic Temperature
- Fiber Optic Pulse Oximetry
- Blood pressure
 - Non-invasive
 - Invasive
- Capnography

Gating

- ECG
- Respiration
- ECG & respiration

Alarms

Temperature control
Record waveform &
trend data

The **Model 1035 monitoring and gating system** is a 3rd generation system in use for more than a decade with mice and other animals in every major medical research institution worldwide. The equipment is now being made available to meet the physiological monitoring and gating needs for anesthetized veterinary animals in the MR environment. The Model 1035 consists of a Multi-parameter data acquisition module located on a roll stand near the magnet bore, an ER data acquisition module located in the magnet bore and a Control/Gating Module connected to a PC located near the operator console. The PC displays multiple waveforms, measured values, trends and gating pulses while a remote display allows visualization for personnel near the magnet.

The **Model 1035 Multi-parameter Module** includes non-invasive blood pressure (NIBP) measuring heart rate, systolic, diastolic and mean arterial pressure, pulse oximetry (SpO₂) using fiber optic sensors to measure oxygen saturation, heart rate and pulse distension, fiber optic temperature (FOT) measuring rectal temperature and capnography measuring respiration rate, end-tidal and minimally inspired CO₂.

The **Model 1035 ER Module** measures ECG using three leads with needle or surface electrodes and respiration from a pneumatic sensor. A rechargeable battery provides module power. ECG and respiration measurements are transmitted out the magnet bore on an optical fiber to the Control/Gating Module.

The **Model 1035 Control/Gating Module** receives data from the Multi-parameter and ER Modules. It sends data to the PC for recording and display. It also receives user instructions from the PC to control measurement and gating functions. Gates from ECG, respiration or ECG and respiration are generated by the module's microprocessor and sent to the MR system. The module also has the capability to control animal temperature around a user defined set point.

Options include a fluid heating system which can regulate the temperature of the animal and invasive blood pressure measuring the cardiac waveform, heart rate, systolic, diastolic and mean arterial pressure.

Compatible with all MR systems: all manufacturers and all field strengths.

Specifications:

Multi-parameter Module:

NIBP	Display range	0 – 300 mmHg
	Cuffs (7)	for multiple limbs
	Heart rate	25 – 300 BPM
SpO₂	Range	70 – 100%
	Heart rate	25 – 700 BPM
Temp	Range	20 – 60 °C
	Channels	1 to 4
CO₂	end-tidal range	0 -13.0%
	Respiration rate	2 – 150 BPM
Module	Size: hwxwd cm	10.2x20.6x16.1

ER Module:

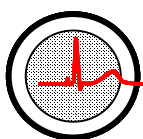
ECG	Range:	25 - 900 BPM
	Accuracy:	±1%
	Input range:	-2.50 mV to 2.5mV
	Input Impedance	>10 MΩ @ 10 Hz
	CMRR:	100 dB @ 60 Hz
Resp	Range	10 - 300 bpm
	Accuracy	1 count
	Sensor	pneumatic pillow
Module	Power - battery	rechargeable
	Battery life:	>15 hours
	Time to full charge	<2 hours
	Size: hwxwd cm	2.1x5.1x14.0

Control/Gating Module:

Gating	R-wave to gate delay	user selectable
	Expiration gate width and delay	user selectable - 1 ms step size
Module	Size: hwxwd cm	3.8x13.3x12.5

PC:

Software: SAll's PC-vet & Windows operating system



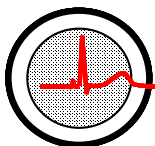
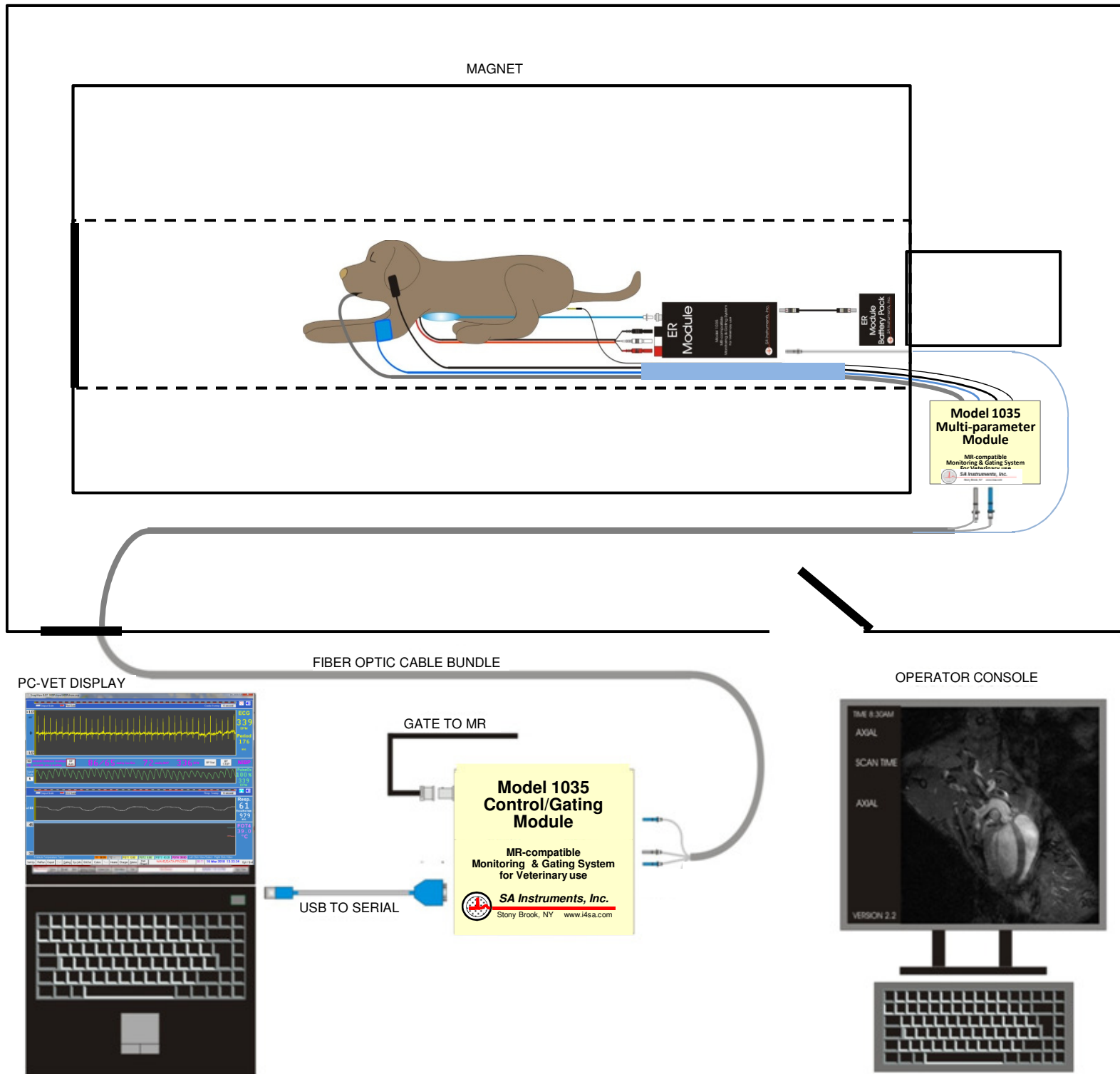
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