OROS
TECHNICAL
SPECIFICATIONS

Instrument Specifications

OR36$_2$/38$_2$
Mobi-Pack$_2$

4 to 32 Channels
Multi-analyzers / Recorders

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General description

The following specifications concern OR36₂, Mobi-Pack₂ & OR38₂ multi-analyzers/recorders. These systems consist of an OR3x hardware containing optional inputs and processing modules, a PC with an Ethernet interface, and NVGate® software with optional plug-in analyzers.

Modules

The following tables detail the complete capacity of OR362, Mobi-Pack2 & OR382 hardware system. Optional or standard modules may fill the described slots.

OR36/Mobi-Pack

Front-end slots	Dynamic and/or parametric analog inputs	4 slots of 4 inputs (BNC)
	Dynamic analog outputs	1 slot of 2 outputs (BNC)
	Externals sync	1 slot of 2 trigger/tachometer inputs (BNC)
	Auxiliary	2 slots of 2 inputs/outputs for optional outputs, Ext. sync or DC (parametric) inputs (BNC)
Auxiliary slots	1 slot for: TEDS	
Processor slots	PC interface	1 slot of 1 DSP (Ethernet)
	Disk management	1 slot of 1 DSP
	Trigger / tachometer / monitoring	1 slot of 1 DSP
	Processing power	4 slots of 1 DSP
Miscellaneous	Internal Hard drive	1 60 GB removable disk with USB 2.0 port
	Remote control (on/off, NVTerm™)	1 RS232 cable connection (RJ11)

OR38

Front-end slots	Dynamic and/or parametric analog inputs	4 slots of 8 inputs (BNC)
	Dynamic analog outputs	1 slot of 2 outputs (BNC)
	Externals sync	1 slot of 2 trigger/tachometer inputs (BNC)
	Auxiliary	2 slots of 2 inputs/outputs for optional outputs or Ext. sync or DC (parametric) inputs (BNC)
Auxiliary slots	1 slot for: TEDS	
Processor slots	PC interface	1 slot of 1 DSP (Ethernet)
	Disk management	1 slot of 1 DSP
	Trigger / tachometer / monitoring	1 slot of 1 DSP
	Processing power	8 slots of 1 DSP
Miscellaneous	Internal Hard drive	1 60 GB removable disk with USB 2.0 port
	Remote control (on/off)	1 RS232 cable connection (RJ11)

Basic hardware configuration

Hardware unit contains at least the following modules. All the other modules are optional.

OR36/Mobi-Pack

Font end	4 analog inputs, 2 analog outputs, 2 trigger/tachometer inputs
Processors	1 Ethernet DSP module for PC interfacing.
	1 disk DSP module for disk management.
	1 master DSP module for Trigger / tachometer / monitoring.
	1 computation DSP module
Disk	1 removable disk with USB 2.0 port

OR38

Front-end	8 analog inputs, 2 analog outputs, 2 trigger/tachometer inputs
Processors	1 Ethernet DSP module for PC interfacing.
	1 disk DSP module for disk management.
	1 master DSP module for Trigger / tachometer / monitoring.
	1 computation DSP module
Disk	1 removable disk with USB 2.0 port

PC requirement

Minimum	Pentium 4/ 2 GHz / 256[1] MB RAM with Windows XP or 512[1] MB with Windows Vista/ Graphics video with at least 32 MB dedicated (not shared) memory / 100 MB free on HD + storage for measurements and signals, CD ROM drive, 1024 x 768 display (XGA), DirectX 8.0
Recommended (for laptop)	Intel **Core 2 Duo** / 2 GHz / 1 GB of RAM with XP/7, **2 GB of RAM with Vista** / Graphics video with **256 MB dedicated** (not shared) memory / 100 MB free on HD + storage for measurements and signals, CD or DVD ROM drive, 1400 x 1024 display (SXGA+), DirectX 10
Recommended (for desktop)	Intel **Core 2 Duo** / **2.6 GHz** or **AMD Athlon 64 X2 Dual-Core 6000+/ 3 GB** of RAM / Graphics video with **512 MB dedicated** (not shared) memory / 100 MB free on HD + storage for measurements and signals, CD or DVD ROM drive, 1600 x 1200 display (UXGA), DirectX 10
Connection	Type: **Ethernet 100base TX**, 100 Mbit/s - Connector: **RJ45** For removable disk: **USB 2.0** - At least one **USB port** for dongle key.
Operating systems	Windows **XP Pro** Service Pack 3 (recommended), Windows **Vista Business** Service Pack 2, Windows **7**

1) Waterfall depth depends on available memory. Minimum configuration does not allow waterfall storage.

Case

Mechanicals

OR36

Weight	**5.2 kg** (11.5 lb)	
Dimensions	Case (w.h.d)	**102 mm x 260 mm x 311 mm** (4.16 in x 10.27 in x 12.24 in)
	Overall (w.h.d)	**114 mm x 280 mm x 350 mm** (4.48 in x 11.03 in x 13.78 in)

Mobi-Pack

Weight	**10.7 kg** (23.5 lb) power supply and accessories included	
Dimensions	Overall (w.h.d)	**470 mm** x **180 mm x 360 mm** (18.5 in x 7.08 in x 11.81 in)

OR38

Weight	**8.2 kg** (18 lb)	
Dimensions	Case (w.h.d)	**102 mm x 380 mm x 311 mm** (4.16 in x 14.96 in x 12.24 in)
	Overall (w.h.d)	**114 mm x 410 mm x 350 mm** (4.48 in x 16.14 in x 13.78 in)

Power supply

OR36/Mobi-Pack

Power	**< 60 VA**	
External AC Power supply	Voltage	**100 to 240 VAC**
	Frequency	**47 to 63 Hz**
DC	Range	**10 V to 28 V**
	Overload protection	**31 V** (over this voltage DC poles are short-circuited)
Battery	Type	**NiMh** (no memory effect)
	Autonomy	**30 min** (1 h for systems with 4 ch. & 1 computation DSP)
	Charge time	**2 h** (typical)
	Charge conditions	DC power supply > 18 V

OR38

Power	**< 100 VA**	
Internal AC Power supply	Voltage	**85-132 VAC** and **170-265 VAC** (auto selectable)
	Frequency	**47 to 63 Hz**
	Complies with **EN61000-3-2 class D**	
DC	Range	**10 V to 28 V**
	Overload protection	**31 V** (over this voltage DC poles are short-circuited)
Battery	Type	**NiMh** (no memory effect)
	Autonomy	**20 min** (40 min for systems with 8 ch. & 2 computation DSPs)
	Charge time	**2 h** (typical)
	Charge conditions	DC power supply > 18 V or powered by mains

Environmental / Compliance with standard

CE	Indicates compliance with EMC Directive **89/336/EEC** and Low Voltage Directive **73/23/EEC**	
Safety	**EN 61010-1 June 2001**	Safety requirements for electrical equipment for measurement, control and laboratory use.
	Over-voltage Cat.	**II** (Local level mains, appliance, and portable equipment)
	Pollution Degree	**2:** Do not operate in environments where pollutants may be present.
EMC Emission	**EN 50081-1**	Generic emission standard: Residential, commercial and light industry.
	EN 50081-2	Generic emission standard: Industrial environment.
	IEC 61326-1	Electrical equipment for measurement control and laboratory use EMC requirements.
	CISPR 22	Radio disturbance characteristics of information technology equipment. Class B limits.
	FCC Rules	Complies with the limits for a Class B digital device.
EMC Immunity	**EN 50082-1**	Generic immunity standard: Residential, commercial and light industry.
	IEC 61326-1	Electrical equipment for measurement control and laboratory use EMC requirements.
	EN 50082-2	Generic immunity standard: Industrial environment.
	Linear input response range on interference	max slew rate on input**: 5 V/ µs**
Temperature	OR36 Operating	**0°C to 50°C** (32°F to 122°F)
	Mobi-Pack Operating	**0°C to 50°C** (32°F to 122°F)
	OR38 Operating	**0°C to 45°C** (32°F to 113°F)
	Storage	**-20°C to 65°C** (-4°F to 149°F)
	Absolute maximum rating[ii]	**-35°C to 70°C** (-31°F to 158°F)
Humidity	Max **80 % RH** at 40°C non condensing	
Shocks	Complies with **IEC 68-2-27**	
	Operating	**100 m/s²** (11 ms, ½ sine) and **700 m/s²** (3 ms, ½ sine)
	Storage	**200 m/s² (**11 ms, ½ sine) and **1 000 m/s²** (3 ms, ½ sine)
	Absolute maximum rating[ii]	**1 000 m/s²** (3 ms, ½ sine)
Vibrations	Complies with **IEC 68-2-6**	
	Operating	**10 m/s², 5-500 Hz, 5mm**
	Storage	**25 m/s², 5-500 Hz, 5mm**
	Absolute maximum rating[ii]	**30 m/s², 5-500 Hz, 5mm**
Enclosure	Type	**IP 40 / IP 31 for Mobi-Pack**

Radio frequencies sensibility

	Input measured with 50 Ω terminator
Radiated RF: 80-1000 MHz, 80% AM 1 kHz, 10 V/m	< 20 µV
Conducted RF: 0.15-80 MHz, 80% AM 1 kHz, 10 V	< 100 µV
Magnetic field: 30 A/m, 50 Hz	< 2 µV

Removable Disk

HDD	type	**1.8" - 60 GB - 4 200 RPM**
	Shock	Operating: **50 m/s²**, 1 ms **/** Non operating: **120 m/s²**, 1 ms
	Vibrations	Operating: **20 m/s²** - 15 to 500 Hz / non operating **50 m/s²**
	Throughput	Max: **32 ch. @20 kHz BW** (40 kHz in 16 bits) - 5h 20min
SSD	type	**1.8" - 32 GB -** SLC **NAND Flash** Memory
	Shock	**10 000 m/s² -**, 0.5 ms
	Vibrations	**200 m/s²** - 40 to 2 000 Hz
	Throughput	Max**: 24 ch. @20 kHz BW** – 2 h gap free
Case	Case (w.h.d)	**83 mm x 20 mm x 97 mm** (3.24 in x 0.78 in x 3.79 in)
	weight	**0.250 kg** (0.55 lb)
Connection	Into the analyzer	High speed parallel **IDE bus 16.7 MB/s**
	To the PC	**USB 2.0** 480 Mbit/s
Power supply	On PC	**USB** powered
	On analyzer	**Internal** power supply

Front-end

Each front end slot of the OR36/Mobi-Pack (4 BNC) and the OR38 (8 BNC) can be occupied by one of the following inputs type:

- Dynamic inputs
- Parametric inputs
- Universal inputs

Universal inputs

The universal inputs gather both dynamics and parametric input in the same board and connector. The universal inputs are necessary to support the Xpod signal conditioner. The type of use of the universal inputs is selectable by software (NVGate®) during the analyzer operations.
The universal inputs fulfill all the performances, precision and operability of each specific input type.

Dynamic inputs

Sampling	Sampling frequencies (Additional decimators allow analysis bandwidth down to 0.8 Hz)	**102.4 kHz, 65.536 kHz, 51.2 kHz, 37.768 kHz, 25.6 kHz, 16.384 kHz, 12.8 kHz, 8.192 kHz, 6.4 kHz, 5.12 kHz, 4.096 kHz, 3.2 kHz, 2.048 kHz**
	Converters	One **24 bit sigma-delta ADC** for each input
	Frequency relative precision	**0.5 10^{-4}** (typical 1 10^{-5})
	Synchronization	All inputs synchronized on the same sampling clock
Anti-aliasing filter	Type	Over-sampled digital filters
	Slope	**> 400 dB/octave**
	Pass band ripple	**< ± 0.005 dB**
	Rejection of parasites bands	**> 100 dB (**@ frequency > 0.57 x FS)
	Effective bandwidth	**0.45 x FS** (ex: 23.4 kHz @ 51.2 kS/s)
Range (peak)	With amplifier (included)	**±100 mV, ±300 mV, ±1 V**
	Direct	**±10 V**
	With attenuator (included)	**±40 V**
Absolute accuracy	Resolution	**24 bits** (144 dB)
	All input ranges at 1 kHz	**±0.05 dB** (typical ±0.015 dB)
	Temperature variability	**< 0.002 dB / 10 °C**
DC offset	±100 mV, ±300 mV and ±1V ranges	**< ± 100 µV**
	±10 V range	**< ± 1 mV**
	±40 V range	**< ± 2 mV**
Frequency flatness and phase response	*Includes channel to channel match with different ranges*	
	±10 V range, DC to 20 kHz	**< ±0.02 dB / < ±0.02 °**
	±10 V range, 20 kHz to 40 kHz	**< ±0.05 dB / < ±0.05 °**
	±0.1 V, ±0.3 V and ±1 V ranges, DC to 20 kHz	**< ±0.02 dB / < ±0.1 °**
	±0.1 V, ±0.3 V, ±1 V ranges, 20 kHz to 40 kHz	**< ±0.1 dB / < ±0.5 °**
	±40 V range, DC to 20 kHz	**< ±0.1 dB / < ±0.4°**
	±40 V range, 20 kHz to 40 kHz	**< ±0.1 dB / < ±0.8 °**
Cross-talk	*Between N (N is odd) and N+1 inputs:*	
	@ 1 kHz: **< -120 dB,** @ 20 kHz: **< -96 dB,** @ 40 kHz: **< -90 dB**	
	Between any inputs excluding: N (N is odd) and N+1 inputs:	
	@ 1 kHz: **< -140 dB,** @ 20 kHz: **< -114 dB,** @ 40 kHz: **< -108 dB**	
Signal to noise ratio	*With 50 Ω terminators:*	
	±10 V range, 40 kHz bandwidth: **> 100 dB**, spurious lines **< -115 dB** of full scale	
	±10 V range, 20 kHz bandwidth: **> 104 dB**, spurious lines **< -125 dB** of full scale	
Input noise	*With 50 Ω terminators:*	
	Thermal input noise	**20nV/√Hz**
	±100 mV and ±300 mV ranges	20 kHz BW **< 3.5 µV** rms, 40 kHz BW: **< 5 µV** rms
	±1 V range	20 kHz BW **< 5.4 µV** rms, 40 kHz BW: **< 8.5 µV** rms
	±10 V range	20 kHz BW **< 44 µV** rms, 40 kHz BW: **< 70 µV** rms
Impedance		**1 MΩ ±1 %, < 100 pF**
Protection	Overvoltage	**±60 V peak without damage - On any inputs**[ii]
Dynamic	Spectral domain	**> 120 dB** (typical >130 dB)

Dynamic inputs (continued)

Coupling	**AC**	Cut-off frequency 0.35 Hz ±10% (analog filter)
	DC	
	ICP	**2 mA** or **4 mA** power supply with AC coupling (±10%)
	ICP + TEDS	ICP + reverse current on TEDS reading operations
	GND	Shortcut to ground- Automatic current limitation to 50 mA
Floating	**Coupling**	AC or DC - Signal ground is floating
	Common mode voltage (all ranges)	Max: **±12 V**
TEDS	Standards	**IEEE 1451.4 2001** revision **1**
	Supported templates	Accelerometer/Force meter (**25**) Microphones (**27**, **28** and **29**)

Parametric (DC) inputs

The following parametric inputs can be added to the standard OR36₂ or OR38₂ hardware configuration as follows:

- On the **auxiliary slot** by set of 2 inputs (max 4)[1]
- On the **OR36/Mobi-Pack** as replacement of 4 dynamics inputs (max 12)
- On the **OR38** as replacement of 8 dynamics inputs (max 24)

The following specifications apply to the universal inputs.

Sampling	Bandwidth / Sampling	**-3 dB @ 3.5 Hz** Independent from dynamic sampling clock
	Converters	One **24 bit sigma-delta ADC** for each input
Range (peak)	Direct	**±10 V**
	With attenuator (included)	**±40 V**
Frequencies rejection	Notch filters frequencies	**50 Hz** & **60 Hz** @ **±1%**
	Rejection	**> 120 dB**
Amplitude	Effective resolution	**22 bits** (out of noise)
	Linearity	Typ. **0.0003 %** of input range peak
	Gain drift	**20 ppm** of input range peak**/°C** typ.
Offset	Offset	±10 V range: < ±**1 mV** / ±40 V range: < ±**2 mV**
	Offset drift	±10 V range: **< 40 µV/°C** / ±40 V range: **< 160 µV/°C**
Impedance		**1 MΩ, 5 nF** typ.
Protection	On any input[ii]	**±60 V** peak
Input Noise	*With 50 Ω terminators, excepted* ±40 V range*:*	
	Input noise	**< 4 µV** rms in 0.1 to 2 Hz BW – Typ **2 µV rms**
	Max. Deviation	**< 6 µV** peak

Dynamic outputs

Sampling	Converters	One **24 bit DAC** for each output
	Synchronization	Same sampling clock as the dynamic inputs
Range	Direct	**±10 V peak**
	With attenuator (included)	**±1 V peak**
	Clipping	**User selectable** in the output range
	Digital gain	From **10^{-5}** to **10^{3}**
Absolute accuracy	Resolution	**24 bits** (144 dB)
	All output ranges at 1 kHz	**±0.05 dB**
	Temperature variability	**< 0.1 dB / 10 °C**
Frequency response	*Variation relative to 0 dB @ 1kHz*	
	All ranges, at 10 kHz	< **±0.05 dB**
	All ranges, at 20 kHz	< **±0.15 dB**
	All ranges, at 40 kHz	< **±0.8 dB**
Noise floor level	10 V range, 20 kHz bandwidth	**-110 dB** of full scale, spurious lines **< -125 dB** of full scale
	10 V range, 40 kHz bandwidth	**-105 dB** of full scale, spurious lines **< -125 dB** of full scale
	1 V range, 20 kHz bandwidth	**-99 dB** of full scale, spurious lines **< -110 dB** of full scale
	1 V range, 40 kHz bandwidth	**-94 dB** of full scale, spurious lines **< -110 dB** of full scale

[1] DC inputs on auxiliary slots features 16 bit dedicated converters, see previous instrument specifications(M002-19-4) for details

Dynamic outputs (continued)

Impedance	User selectable	**50** Ω, **600** Ω or **Grounded**
Current	Max	**±10 mA**
Protection	Sum of injected + generated voltages	**±15 V peak,** On any output[ii] Permanent short circuit supported
Total harmonic distortion	THD @ 1 kHz	**< 0.002%** or **-94dB** at 20 kHz BW
	THD @ 5 kHz	**< 0.005%** or **-86dB** at 20 kHz BW
Cross-talk	Output 0 dBV to 50 Ω terminated input	**Lower than measurable noise**

External sync

Sampling	Frequencies	**64 times over-sampling** of the current input sampling (up to **6.4 MHz**)
	Converters	High speed voltage comparator and time counter
Ranges (peak)		**±300 mV**, **±1 V**, **±3 V**, **±10 V**, **±40 V**
Resolution	Amplitude accuracy	**±1%** of **range**
Setting	Hysteresis	**1%** (of input range) to input range
	Hold off	**0 s** to **500 s**
	Slope	**Rise** or **fall**
	Hardwired pre-divider	**1** to **255**
Accuracy	**Time resolution**	**> 160 ns** (0.06° at 1 kHz and 1.2° at 20 kHz)
Pulse rate	Max	**375 kpulse/s**
Coupling	**AC**	Cut-off frequency 0.35 Hz ±10% (analog filter)
	DC	
Impedance		**1 MΩ**, < 100 pF
Protection	on any external sync[ii]	**±60 V peak** without damage

Expander modules (Xpod)

With the universal inputs the OR36$_2$ and OR38$_2$ can receive signal conditioning modules called Xpod[2]. Different Xpod types are available.

Wheatstone bridge Xpod

Connectors	Type	**Sub-D9 – Female**
Bridges	Mounting	**Full**, **Half** and **quarter**
	½ bridge completion resistors	2 * **10 kΩ** - 0.1% - 10 ppm
	¼ bridge completion resistors	120 **Ω** or 350 **Ω** - 0.1% - 25 ppm
	Excitation voltages	**0 to 10 V**
	Excitation currents	0 to 4 V: **< 30 mA -** 4 V to 10 V: < **12 mA**
	Sensing	**Negative** and **positive** probes
Amplifiers	Type	Differential – DC capable
	Gains	**10** or **100**
	Error	**< 0.01 dB**
Inputs	Ranges	**±100 mV - ±1 V**
	Common mode voltage	**±7** V without limiting differential input
	Impedance	**1 MΩ**
	Noise floor levels (100 Hz to 20 kHz)	Gain 100: **2 µVrms** - Gain 10: **4 µVrms**
DC offset	Temperature drift	**1 µV/°C**
	Compensation resolution	**3 %** of present offset
Protection	Overvoltage	Device on: max **±30 V** - device off: max **±15 V**

[2] Not available on Mobi-Pack

Temperature Xpod

The temperature Xpod operates on the universal or parametric inputs. The XPod support thermocouple and RTDS conditioning, cold point compensation and linearization. Amplified signal are re-inject in the analyzer on the ±10 V range.

Connectors	Type	Mini Thermocouple/RTD type
	Pins	**3 polarized pin** - spring-loaded - compatible with 2 point plugs
	Material	Glass filled thermoplastic - White body
Thermocouples	**Type J**	**-210 °C to +1 100 °C** - Yellow LED
	Type K	**-200 °C to +1 300 °C** - Green LED
	Type T	**-200 °C to +390 °C** - Brown LED
	Type N	**-200 °C to +1 200 °C** - Pink LED
	Type E	**-200 °C to +800 °C** - Purple LED
	Cold compensation	Integrated - 2 sensors - user on/off
	Absolute temperature error	< ±**0.1%** full range - < ±**0.4 °C** @ 0°C
RTDS	PT 100	**-190 °C to +880 °C*** – Blue LED
	PT 1000	**-190 °C to +880 °C*** - Grey LED
	Absolute temperature error	< **±0.5 %** full range - < **±0.25 °C** @ 0°C
	Wires	3 wires connections
	Current	PT100: **500 µA to 4 mA** - PT1000: **500 µA** to **1 mA**

*Calibrated up to +800 °C

Digital computation

The following table details the optional DSP modules that can be added to OR36 & OR38 hardware to fit analysis mode calculation needs.

Signal Processing Units

SPU (Signal Processing Units): the following table gives the characteristics of each analysis mode and the associated SPU consumption. For multi-analysis purpose, add the corresponding SPUs of each mode used simultaneously and increase the sum by 10%. "Real-time" means that the analysis speed is faster than the input rate and does not miss any sample.

FFT	Real-time FFT analysis with;
	401 lines (for 801, 1601,3201, 6401 lines, multiply requested SPU respectively by 1.25, 1.5, 2, 3)
	20 kHz bandwidth (Requested SPU are proportional to bandwidth)
	0% overlap
	1 channel processing requires **1 SPU**
Order analysis	Real-time order spectrum analysis (re-sampled time signal) with:
	Any duration of visualization, any averaging
	20 kHz bandwidth (Requested SPU are proportional to bandwidth)
	1 channel processing requires **3 SPUs**
Time Domain	Real-time time domain monitor and statistical analysis with:
	Simultaneous time view and statistical extraction. Any duration of visualization, any averaging
	20 kHz bandwidth (Requested SPU are proportional to bandwidth)
	1 channel processing requires **1 SPU**
1/n Octave	Real-time filter based 1/n octave analysis with:
	1/3rd octave (for 1/12th and 1/24th octave multiply requested SPU respectively by 2 and 4)
	20 kHz bandwidth (Requested SPU are proportional to bandwidth)
	1 channel processing requires **3 SPUs**
Recorder	Gap free recording with:
	51.2 kHz sampling rate gap free recording
	1 channel processing requires: -*Standard DSP*: **1 SPU** @ SF ≥ 32 768 S/s – **1 SPU x SF/32 768 SF** @ SF < 32 768 S/s -*Force DSP*: **0.66 SPU**

Special DSPs modules

The following DSPs are always integrated in OR36 & OR38 hardware.

Master DSP module	Monitor computations	**FFT 401 lines** (max 4 Channels)
	Time domain detectors	**DC, Max, Min, RMS, Kurtosis** (on the monitor Channels)
	Events	Threshold detections, combinations
Disk DSP module	**File management** and **recovery**	
	On-line computation (compression) of recorded **raw data overview**	
	Samples compression	**32** or **16 bits** (user selectable)
Ethernet DSP module	**Connection to PC**	
	D-rec management	

Computation DSPs modules

The following computation DSP modules are optional. DSP mix is not allowed; All DSPs must be of the same type in one instrument.

Standard DSP

Type	Sample size	**32 bit floating**
	Computation words	**32/40 bits**
	Internal memory	**4 MSamples**
Power	Computation capability	**12 SPU / DSP module**
Input sharing	Inputs per DSP	**8 max**

ForceDSP

Type	Sample size	**32 bit floating**
	Computation words	**32/40 bits**
	Internal memory	**16 MSamples**
Power	Computation capability	**Up to 48 SPU / DSP module**
Input sharing	Inputs per DSP	**8 max**

Computation DSP module / OR36, Mobi-Pack & OR38 unit

Minimum	**1** Computation DSP module	**12 SPU / 48 SPU**
OR36/MP Max.	**4** Computation DSP modules	**48 SPU / 192 SPU**
OR38 Max.	**8** Computation DSP modules	**96 SPU / 384 SPU**

Notes

The previous specifications describe all the guaranteed capacities and performances of the instrument and are applicable to an OR36/MP_2-16 or OR38$_2$-32 hardware powered for more than 15 minutes at a stabilized room temperature of 23°C ±5°C and calibrated since less than one year.

The adapted control software NVGate® is described separately.

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[i] Prepared for future use: the related specifications or options are in development.

[ii] Exceeding absolute maximum ratings damages the system and voids guarantee.

OROS, Leadership through Innovation

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