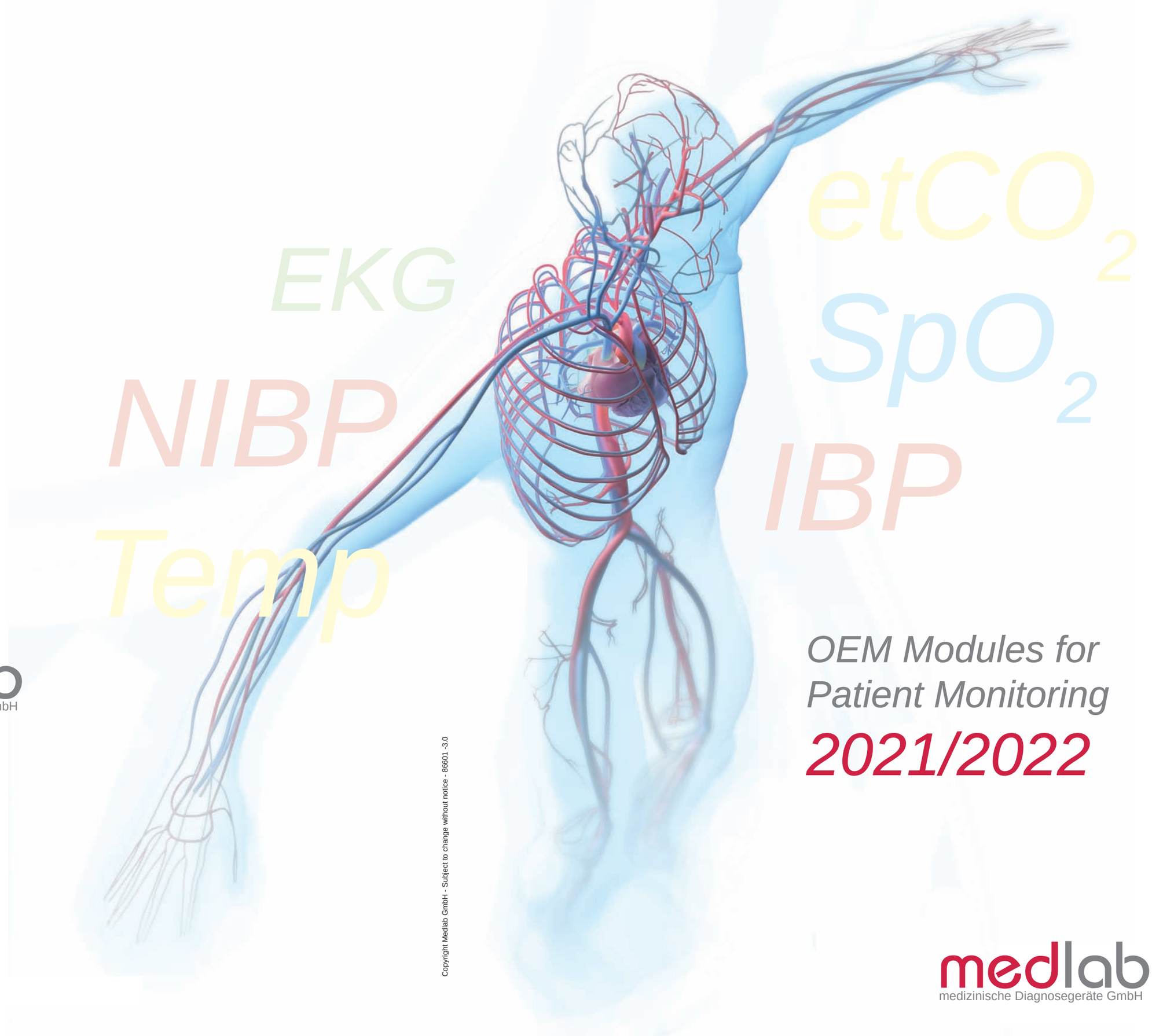

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OEM Modules for Patient Monitoring

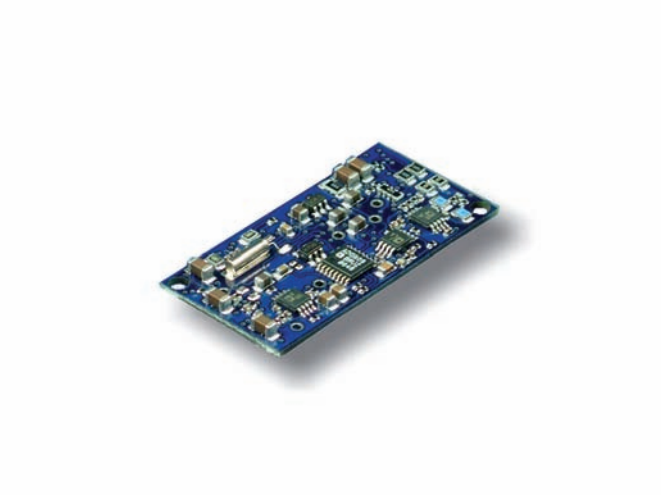
2021/2022

medlab
medizinische Diagnosegeräte GmbH

Contents

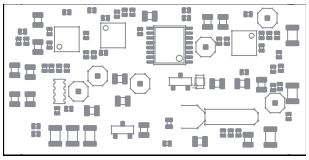
EG00352

Pulse Oximeter OEM Module



SpO_2

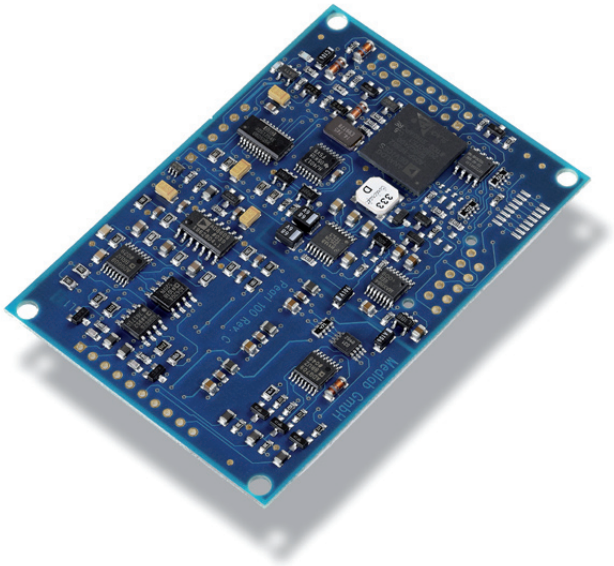
- *Advanced 32-Bit processor technology with fourth generation algorithm, recommended for infants and adults*
- *Small size (40 x 20 mm), maximum height 6 mm*
- *Lock-in based signal recovery*
- *Greatly improved suppression of ambient light*
- *Lowered influence of electromagnetic disturbances*
- *Easily integrable into handheld and desktop devices*
- *Single power supply (3.3 V DC), 50 mW*
- *Serial TTL level serial UART interface*
- *Transmission of SpO_2, pulse rate, plethysmographic waveform, "quality"–signal, status information, and perfusion index*
- *High flexibility in interface protocols*
- *Measurement of pulse rate between 30 – 248 bpm*
- *Measurement of SpO_2 between 0 and 100%*
- *Data of desaturation study available for regulatory purposes*
- *Complete line of probes available, coded or uncoded*
- *Complies with ISO 9919:2009 and ISO 80601-2-61:2018*



Original Size

PEARL100*

Pulse Oximeter OEM Module



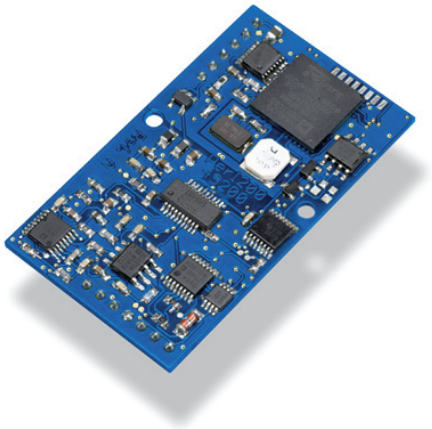
SpO_2

- *Advanced signal processor technology with artefact suppression, recommended for neonates, infants and adults*
- *Small size (77 x 53 mm), maximum height 6 mm*
- *Lock-in based signal recovery down to a pulsation of 0.05% (AC/DC ratio)*
- *Ultra low noise design for highest performance on centralized patients*
- *Greatly improved suppression of ambient light and electromagnetic disturbances*
- *Easily integrable into handheld and desktop devices*
- *Single power supply (3.3-5.5 V DC), 100 mW (@ 3.3 V)*
- *RS232 and TTL level serial UART interface*
- *Transmission of SpO_2, pulse rate, plethysmographic waveform, "quality"–signal, status information, and perfusion index*
- *High flexibility in interface protocols*
- *Measurement of pulse rate between 30 and 250 bpm*
- *Measurement of oxygen saturation between 0 and 100%*
- *Data of desaturation study available for regulatory purposes*
- *Complete line of probes available, coded or uncoded*
- *Complies with ISO 9919:2009 and ISO 80601-2-61:2018*

** Pulse Enhancement Artefact Rejection Logic*
PEARL is a registered trademark of Medlab Gmbh

PEARL200*

Pulse Oximeter OEM Module



SpO_2

- *Advanced signal processor technology with artefact suppression, recommended for neonates, infants and adults*
- *Very small size (55 x 31.5 mm), maximum height 4 mm*
- *Position of probe and host connector identical to PEARL100 board*
- *Lock-in based signal recovery down to a pulsation of 0.05 % (AC/DC ratio)*
- *Ultra low noise design for highest performance on centralized patients*
- *Greatly improved suppression of ambient light and electromagnetic disturbances*
- *Easily integrable into handheld and desktop devices*
- *Single power supply (3.3 V DC), 110 mW for average finger thickness*
- *CMOS level serial asynchronous interface*
- *Transmission of SpO_2, pulse rate, plethysmographic waveform, perfusion index, "quality"-signal, and status information*
- *Measurement of pulse rate between 30 and 250 bpm*
- *Measurement of oxygen saturation between 0 and 100 %*
- *Data of desaturation study available for regulatory purposes*
- *Complete line of probes available, coded or uncoded*
- *Complies with ISO 9919:2009 and ISO 80601-2-61:2018*

** Pulse Enhancement Artefact Rejection Logic*
PEARL is a registered trademark of Medlab Gmbh

EG01000

One Channel ECG Module

ECG

- *Digital filtering including 50 or 60 Hz notch filter*
- *Small size (77 x 53 mm), maximum height 10 mm*
- *Single power supply (5 V DC), 150 mW*
- *RS232 and TTL level serial UART interface*
- *Can be used for highly accurate ECG triggering*
- *Integrated patient isolation according to IEC 60601-1*
- *Integrated defibrillation protection*
- *Integrated lead-off detection*
- *Transmission of pulse rate and ECG waveform*
- *Status messages and commands sent over serial interface*
- *Measurement of pulse rate between 30 and 248 bpm*
- *Three amplification stages*
- *Three curve transmission speeds*
- *ECG cables and evaluation kit available*

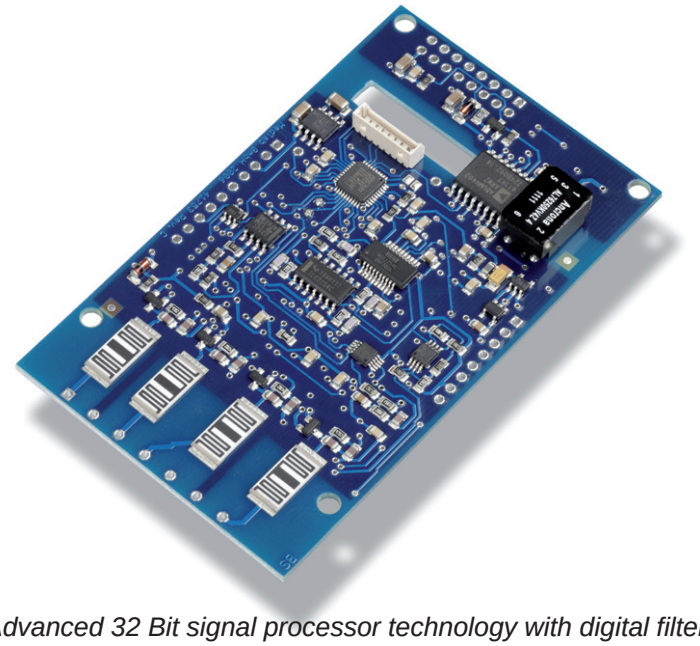
Applications:

Simple ECG Monitors

ECG Triggering for CT scanners, Gamma Cameras aso.

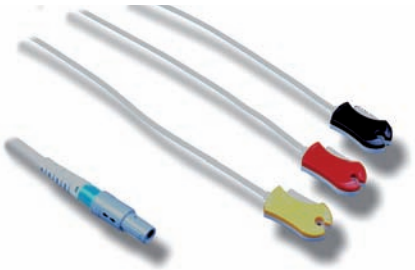
EG01010

Three Channel ECG Module



ECG

- *Advanced 32 Bit signal processor technology with digital filtering*
- *Small size (88 x 53 mm), maximum height 10 mm*
- *Monitors Einthoven I, II or III with three lead cable*
- *Measurement of respiration rate over the electrodes (Option)*
- *Single power supply (5 V DC), 185 mW*
- *RS232 and TTL level serial UART interface*
- *Integrated patient isolation according to IEC 60601-1*
- *Integrated defibrillation protection*
- *Integrated lead-off detection*
- *Complies with the newest version of IEC 60601-2-27*
- *Transmission of pulse rate and ECG waveform*
- *Measurement of pulse rate between 30 and 248 bpm*
- *Three amplification stages*
- *Three curve transmission speeds*
- *ECG cables and adapters available*
- *Pacemaker detection and rejection*



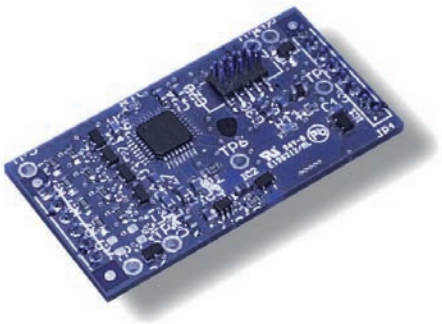
Applications:

ECG Monitoring

ECG Triggering for CT scanners, Gamma Cameras aso.

EG04000

Six Channel ECG Module



ECG

- *Advanced signal processor technology with digital filtering*
- *Small size (40 x 21 mm), maximum height 5 mm*
- *Monitors I, II, III, aVR, aVL, aVF with four lead cable*
- *Monitors I or II or III with three lead cable*
- *Integrated pacemaker detection and rejection*
- *Lead-off detection for each electrode*
- *Single power supply (3.3 V DC), <75 mW*
- *CMOS level serial asynchronous interface*
- *Highly accurate ECG trigger output*
- *Complies with the newest revision of IEC 60601-2-27*
- *Transmission of pulse rate, ECG waves and status messages*
- *R-wave detection, measurement of pulse rate (30 - 248 bpm)*
- *Four amplification stages, four curve transmission speeds*
- *ECG cables and adapters available*
- *neonate / pediatric mode selectable*

Applications:

Low power ECG monitoring

Portable ECG recorders

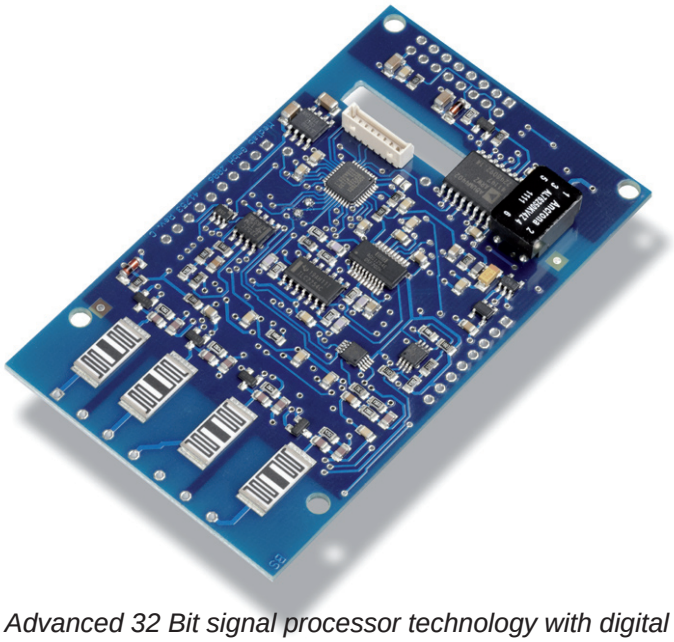
Holter recorders

Event recording

Telemetry applications

EG05000

Seven Channel ECG Module



ECG

- *Advanced 32 Bit signal processor technology with digital filtering*
- *Small size (88 x 53 mm), maximum height 10 mm*
- *Monitors I, II, III, aVR, aVL, aVF, and C with five lead cable*
- *Monitors I, II, III, aVR, aVL, aVF with four lead cable*
- *Monitors I, II or III with three lead cable*
- *Measurement of respiration rate over the electrodes (Option)*
- *Single power supply (5 V DC), 250 mW*
- *RS232 and TTL level serial UART interface*
- *Highly accurate isolated ECG Trigger output pin*
- *Patient isolation according to IEC 60601-1 (4 kV, Type CF)*
- *Integrated defibrillation protection*
- *Integrated pacemaker detection and lead-off detection*
- *Complies with the newest version of IEC 60601-2-27*
- *Transmission of pulse rate, ECG and respiration waveform*
- *Measurement of pulse rate between 30 and 250 bpm*
- *Four amplification stages*
- *Four curve transmission speeds*
- *ECG cables and adapters available*
- *neonate / pediatric mode selectable*

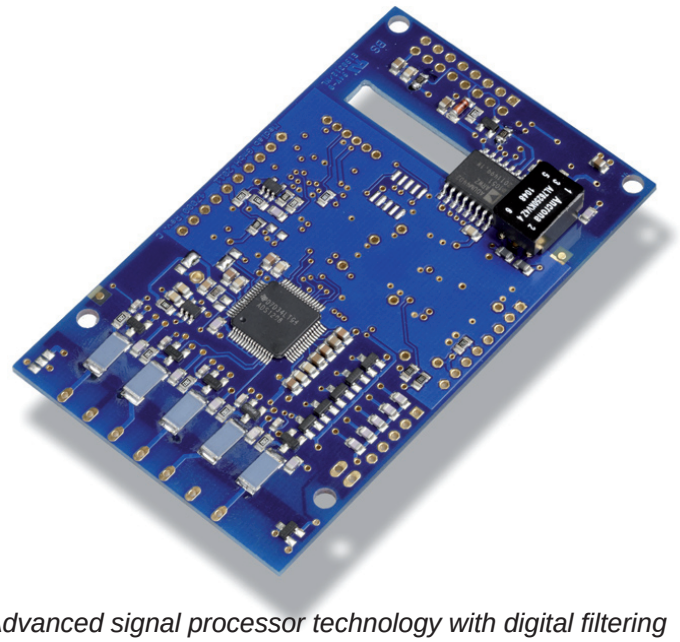
Applications:

High-End ECG Monitoring

ECG triggering for CT scanners, Gamma Cameras aso.

EG12000

Twelve Channel ECG Module



ECG

- *Advanced signal processor technology with digital filtering*
- *Small size (88 x 53 mm), maximum height 10 mm*
- *Mechanically compatible to the three and five channel modules*
- *Monitors I, II, III, aVR, aVL, aVF, and C1-C6 with ten lead cable*
- *Monitors I, II, III, aVR, aVL, aVF, and C with five lead cable*
- *Monitors I, II, III, aVR, aVL, aVF with four lead cable*
- *Monitors I, II or III with three lead cable*
- *Integrated pacemaker detection and lead-off detection for each electrode*
- *Measurement of respiration rate over the electrodes (Option)*
- *Single power supply (5 V DC), 300 mW*
- *RS232 and TTL level serial asynchronous interface*
- *Highly accurate isolated ECG Trigger output*
- *Integrated patient isolation according to IEC 60601-1, class CF*
- *Integrated defibrillation protection for limb leads*
- *Complies with the newest version of IEC 60601-2-27*
- *Transmission of pulse rate, ECG, and respiration waveform*
- *Four amplification stages, four curve transmission speeds*
- *ECG cables and adapters available*
- *neonate / pediatric mode selectable*

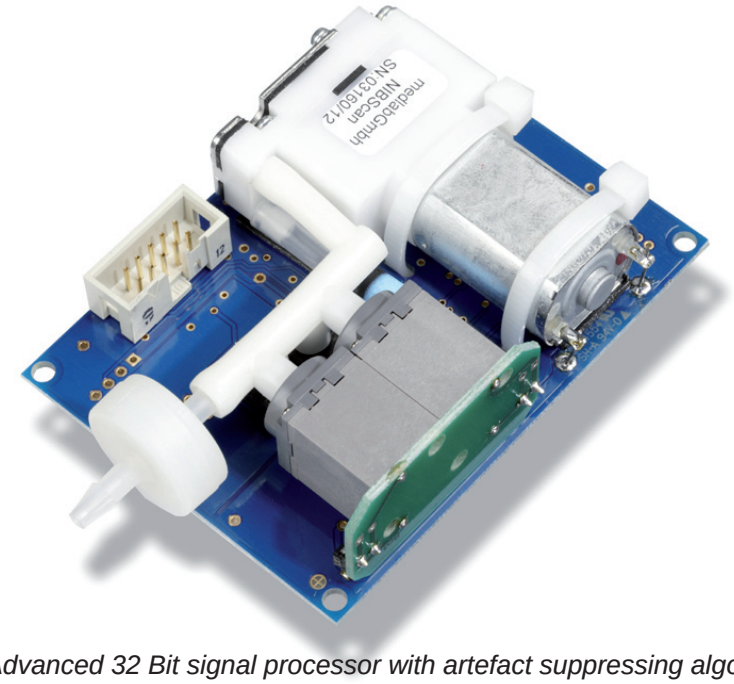
Applications:

High-End 12 channel ECG Monitoring

ECG Triggering for CT scanners, Gamma Cameras aso.

NIBScan

Non-Invasive Blood Pressure Module

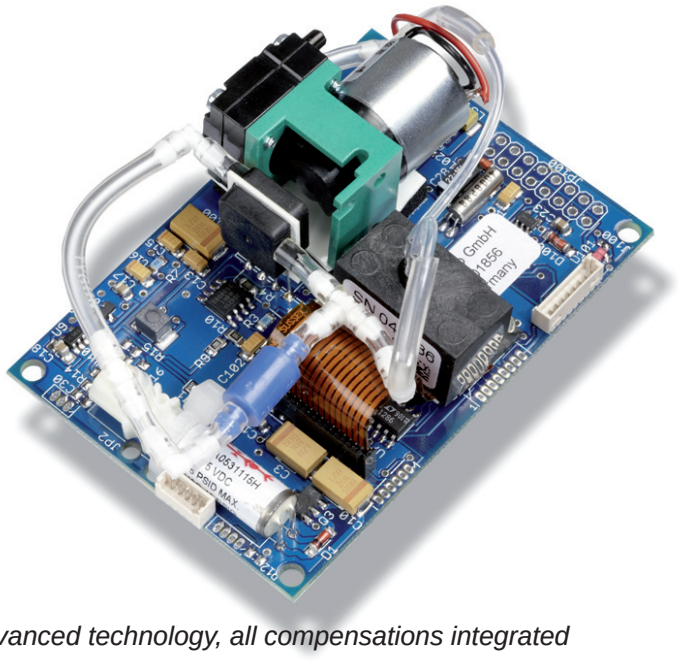


NIBP

- *Advanced 32 Bit signal processor with artefact suppressing algorithm*
- *Very small size: 80 x 60 mm, maximum thickness 26 mm, weight 120 g*
- *Innovative pneumatic manifold design*
- *High reliability due to low pneumatic part count*
- *Power supply: 5,5-15 Volt, one supply voltage only*
- *Low power consumption: max. 2500 mW measuring, 150 mW standby*
- *Purely oscillometric method, short measurement time*
- *Preselected or automatic pump-up pressure*
- *Redundant pressure sensor and pressure relieve valve*
- *Neonatal and adult mode*
- *Pulse rate: 30 - 230 bpm - SYS, DIA, MAP blood pressure: 5 - 280 mmHg*
- *Serial UART interface*
- *Transmission of pulse rate, systolic-, mean-, and diastolic pressure*
- *Status messages and commands sent over the serial interface*
- *Integrated automatic cyclic measurements, Stat mode available*
- *Complies with the newest version of IEC 80601-2-30*
- *Complies with EN 1060-1, EN 1060-3, EN 1060-4 and ISO 81060-2*
- *Clinically validated for adults and neonates*
- *Clinical test data available for regulatory / registration purposes*
- *Latex free cuffs with bladder available in six sizes*
- *Neonatal disposable cuffs available*

EG01200

Sidestream Capnography Module

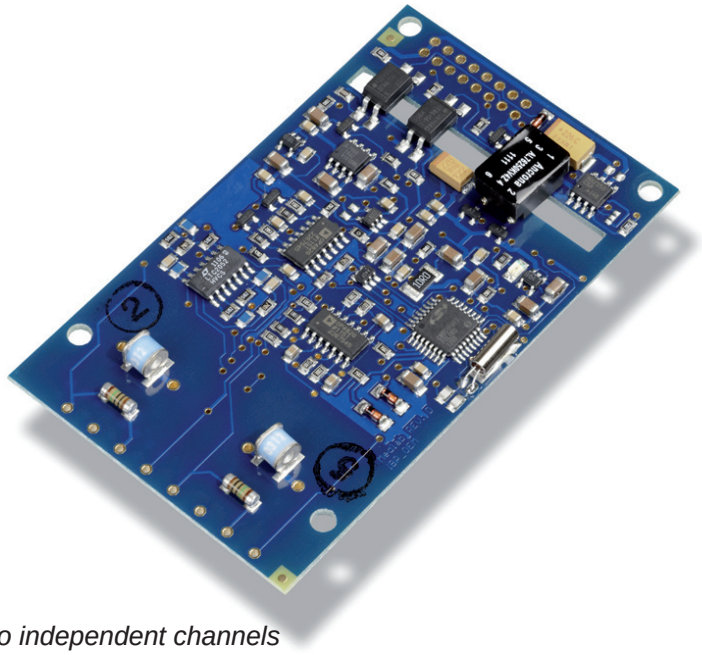


$etCO_2$

- *Advanced technology, all compensations integrated*
- *Small size (77 x 53 mm), maximum height 28 mm*
- *Single power supply (5 V DC), low power (450,1100 mW when zero calibration)*
- *Measures $etCO_2$, $inCO_2$, respiration rate*
- *Capnogram can be transmitted in three different sample rates*
- *Measurement of respiration rate between 0 and 99 min^{-1}*
- *Measurement of $etCO_2$ in either mmHg or %Vol (0-13%)*
- *Monitors bench temperature, ambient pressure, and flow rate*
- *Regulated flow rates of 60, 100, and 150 ml/min*
- *User adjustable compensation for N_2O and O_2*
- *Highest quality, long life-time pneumatics integrated (>10000h)*
- *Integrated valve for auto-zeroing*
- *Two-point calibration*
- *Addtional input for FiO_2 sensor (galvanic oxygen cell)*
- *High resolution capnogram also on higher respiration rates*
- *Complies with the newest version of ISO 80601-2-55*
- *Status messages and commands send over serial interface*
- *RS232 and TTL level serial UART interface*
- *Mechanically compatible with other Medlab modules*
- *Filters and adapters available*

EG02000

Invasive Blood Pressure Module

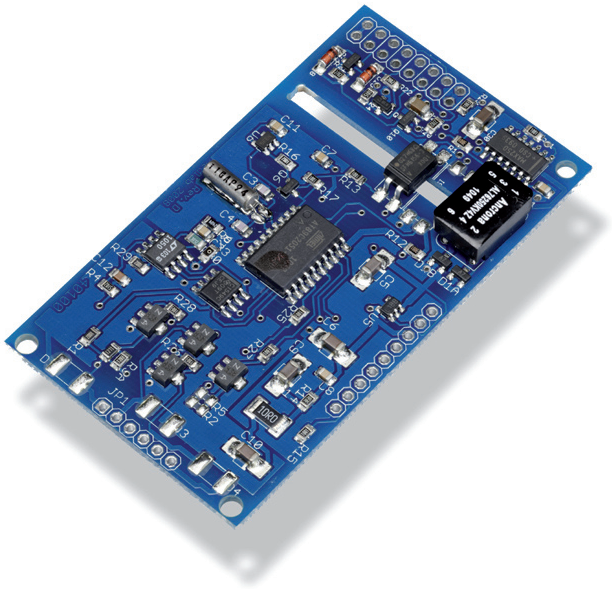


IBP

- *Two independent channels*
- *Works with standard pressure transducers of 5µV/V/mmHg*
- *Simulation mode built-in for easy integration into user system*
- *Waveform transmission speed selectable (50, 100, and 150 Hz)*
- *Displays static pressures and waveforms*
- *Integrated pulse rate detection: 30 bpm - 250 bpm*
- *Automatic detection of systolic -, mean-, and diastolic blood pressure*
- *Measuring range -100 mmHg to +300 mmHg (+/-1% accuracy)*
- *Zero point can be shifted by +75 / -100 mmHg*
- *Zeroing commands built-in - independently for both channels*
- *Transmission of pulse rate, systolic -, mean-, and diastolic pressure*
- *Status messages and commands send over the serial interface*
- *Lifetime calibration*
- *Complies with IEC 60601-2-34*
- *Defibrillation protection and Patient isolation built-in (4 kV, Type CF)*
- *RS232 and TTL level serial UART interface*
- *Very small size: 88 x 53 mm, maximum thickness 10 mm*
- *Power supply: 5 Volt, one supply voltage only*
- *Power consumption: 500 mW max, depending on transducer impedance*

EG00700

Two Channel Temperature Module



°C

- *Two independent channels plus reference channel*
- *Small size (77 x 44 mm), maximum height 10 mm*
- *Single power supply (5 V DC), 60 mW*
- *RS232 and TTL level serial UART interface*
- *Integrated patient isolation according to IEC 60601-1 (4 kV, Type CF)*
- *Integrated sensor-off detection*
- *Transmission of temperature values, resolution 0.1°C*
- *Measuring range 20°C up to 44.0°C*
- *Compatible with all YSI 400 Probes*
- *Accuracy: +/- 0.1°C + Probe Tolerance*

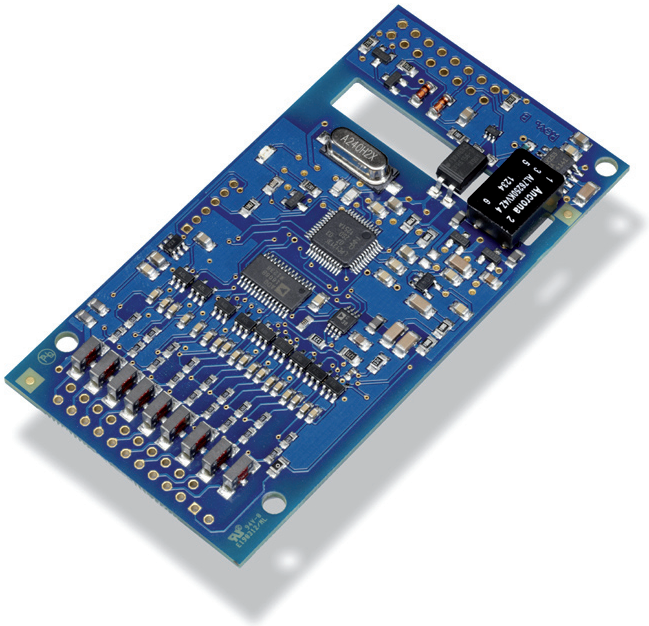
Applications:

Patient Monitors

Temperature measurement for incubators aso.

EG00751

Nine Channel Precision Temperature Module



°C

- *Nine independent channels, plus reference channel*
- *Small size (85 x 44 mm), maximum height 10 mm*
- *Single power supply (5 V DC), 175 mW*
- *RS232 and TTL level serial asynchronous interface*
- *Integrated patient isolation according to IEC 60601-1, class CF*
- *Packet oriented transmission with checksum*
- *Transmits up to 10 measurements per second*
- *Resolution 0.01°C*
- *Measuring range 15.00°C up to 59.00°C*
- *Compatible with all YSI 400 Probes*
- *Defibrillation protection*
- *Accuracy: +/- 0.01°C to +/- 0.02°C + Probe Tolerance*

Applications:

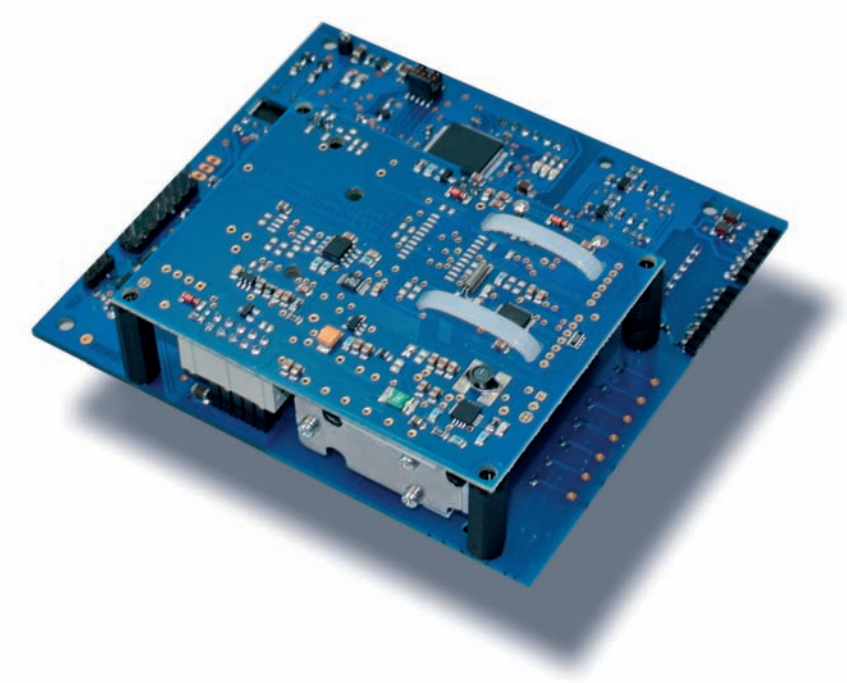
Patient Monitors

Temperature measurement for incubators

Industrial precision temperature measurement

MP01000

Multiparameter Patient Monitoring Module



ECG
SpO_2
NIBP
Temp

GENERAL

- *Advanced signal processor technology with digital filtering for all parameters*
- *Small size (110 x 100 mm), maximum height 40 mm.*
- *Single power supply (7-15 V DC), 980 mW (@7 V, while NIBP not measuring)*
- *Maximum power requirement 2000 mW, while NIBP measuring*
- *Power down input, powers down the complete system*
- *RS232 and TTL level serial asynchronous (UART) interface*
- *CAN interface with user selectable bit rate and identifier addresses*
- *Integrated patient isolation in accordance to IEC 60601-1*
- *Integrated defibrillation protection for ECG and temperature*

ECG

- *Monitors I, II, III, aVR, aVL, aVF and one chest lead with five lead cable*
- *Measurement of pulse rate, range 30 – 249 bpm*
- *User selectable curve transmission rate and amplification*
- *Command selectable monitoring - or diagnostic bandwidth*
- *Integrated pacemaker detection and lead-off detection for each electrode*
- *Measurement of respiration rate over electrode impedance (optional)*
- *Highly accurate isolated ECG trigger output*
- *Complies with newest revision of IEC 60601-2-27*

SPO_2

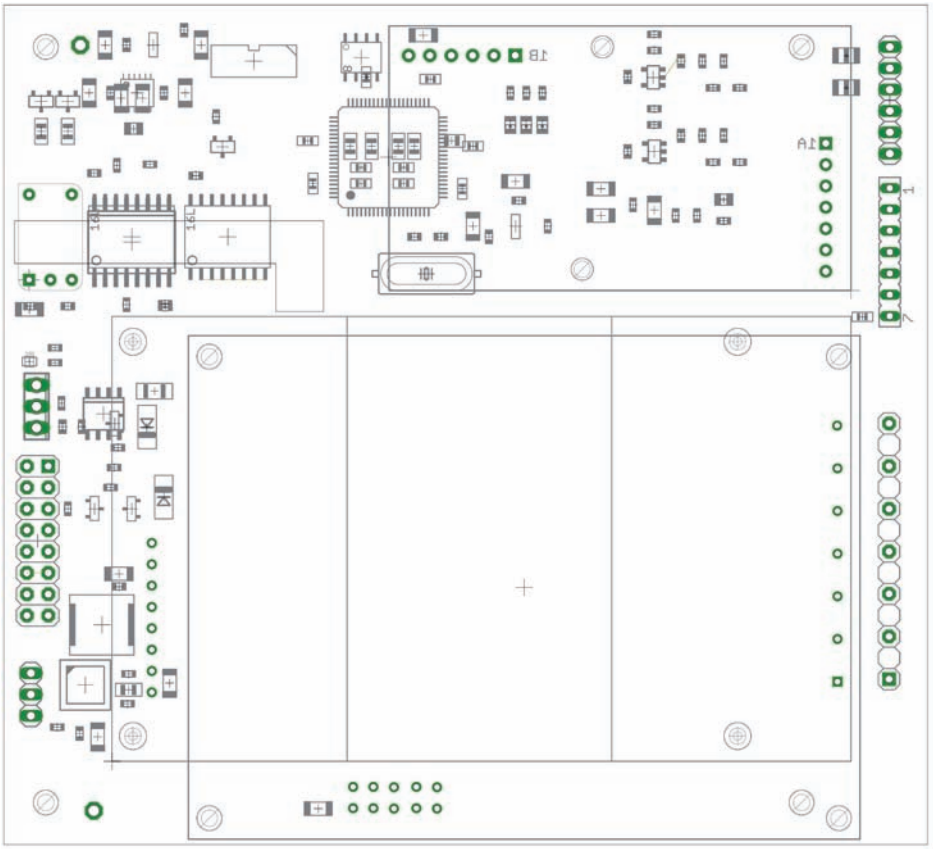
- *Lock-in based signal recovery down to a pulsation of 0.05 % (AC/DC ratio)*
- *Ultra low noise design for highest performance on centralized patients*
- *Excellent suppression of artefacts, ambient light and EM-disturbances*
- *Transmits SpO_2, pulse rate, plethysmographic waveform, perfusion index*
- *Selectable transmission speed of waveform and averaging of SpO_2*
- *Complete line of re-usable and disposable probes available*
- *Complies with newest revision of ISO 80601-2-61*

NIBP

- *Purely oscillometric method, short measurement time*
- *Redundant pressure sensor and pressure relieve valve for increased patient safety*
- *Neonatal and adult modes*
- *Transmission of pulse rate, systolic-, mean- and diastolic pressure*
- *User selectable automatic cyclic measurements*
- *Clinically validated for adults and neonates*
- *Complies with newest revision of IEC 80601-2-30 and ISO 81060-2*

TEMPERATURE

- *Two independent channels, plus reference channel*
- *Measuring range 25.0 °C up to 50.0 °C*
- *Compatible with all YSI 400 Probes*



SpO_2 probes for EG00352 and PEARL100 / PEARL200

Ordering Info

Reusable Probes:

Type	Patient Weight	Ref. Number
Fingerclip P-200	>20 kg	00535
Fingerclip PS-200	>20 kg	00537
Oxiflex large R-200	>20 kg	00550
Oxiflex small RS-200	>10 kg	00570
Wrap Probe WR-200	>1 kg	00532
Y Probe Y-200	>1 kg	00526

Disposable Probes:

Type	Patient Weight	Ref. Number
Disposable Adult	>20 kg	00520
Disposable Child	8 kg - 30 kg	00521
Disposable Infant	5 kg - 15 kg	00522
Disposable Neonate	<5 kg	00523

Medlab PEARL SpO_2 probes can be used with all Medlab pulse oximeters currently sold. They are the result of more than 15 years of experience in developing SpO_2 sensors. By using only the highest quality cabling, a Kevlar re-enforcement and a specially designed cable strain relief, we are able to offer all our reusable probes with a two year warranty.

The standard cable length of the sensors is 140 cm, extension cables are available as an option.

P-200
Fingerclip probe

PS-200
Small Fingerclip probe

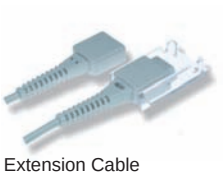
R -200
Oxiflex large finger probe

Patient Cable
Lemo-DSUB

Y-200
Universal Y-probe

RS-200
Oxiflex small finger probe

WR-200
Wrap probe



Extension Cable
DSUB-DSUB

Disposable probes
Delivery:
Package of 24 pieces

NIBScan
Blood Pressure Cuffs

The NIBScan blood pressure cuffs combine comfort with durability. They are designed with great care and made of robust materials, without using latex or PVC.
The textile cuff is coated with a skin friendly material and is easy to clean. The bladder is made of strong but flexible polyurethane for high durability.
NIBScan blood pressure cuffs are available for monitors using single or double connection hoses. They are delivered in six sizes: three adult types, one type to be used on the thigh and two cuffs for children and infants. The cuffs are employed with threaded connectors as a standard, other connectors are available, please see the table on the right side.

Applications

- *Patient Monitoring*
- *Ambulatory Blood Pressure Recorders*

Ordering Info

Cuffs with one connection hose:

Size	Limb Circumference	Ref. Nr
Infant	9-15 cm	90110
Child	14-21 cm	90210
Small adult	20-28 cm	90310
Normal adult	27-35 cm	90410
Large adult	34-44 cm	90510
Thigh	42-52 cm	90610

For the different connection systems, please add the following codes after the order number:

Bayonet connector - Suffix SHP

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