JOINT STOCK COMPANY
CONCERN MORINFORMSYSTEM-AGAT

КОРПОРАЦИЯ
МОРСКОГО
ПРИБОРОСТРОЕНИЯ

JOINT STOCK COMPANY
RESEARCH AND PRODUCTION FIRM
MERIDIAN

KASATKA

FIRE ALARM SYSTEM

+7 (812) 602-03-52
https://npfmeridian.ru

KASATKA
FIRE ALARM SYSTEM

Kasatka Fire Alarm System is a computerized analogue addressable system of data collection and processing designed to automatically detect fire and pre-fire situations, generate alarm and warning signals sending them to external circuits, transmit current data on fire hazard situation in the monitored premises to interfaced devices and in case of fire, provide crew guidance and control fire doors based on pre-set algorithms.

FEATURES

- Centralized or distributed architecture
- Operation in explosion-hazardous premises
- Russian Maritime Register of Shipping (RMRS) compliant

THE SYSTEM COMPRISES

- ЦП (TsP) device for data collection, processing and display
- ЦПИ (TsPI) central information panel
- ВПИ (VPI) remote information panel
- ПСИ-1 (PSI-1) data collection and display panel
- ПСИ-2 (PSI-2) data collection panel
- Flame, infrared, smoke and gas detectors and combined detectors
- Fire door control devices

MAIN SPECIFICATIONS

Power supply	
Main	380 V (220 V) 50 Hz
Standby	24 V DC
Emergency	24 V from the embedded power supply source
Number of addressable devices	Up to 5,481
Temperature detectors response threshold	+54 ÷ +78 °C for detectors with a threshold of 65 °C +80 ÷ +100 °C for detectors with a threshold of 90 °C
Smoke detectors response threshold	From 2.5 to 12.5% for detectors with a threshold of 12.5% from 12.5 to 50% for detectors with a threshold of 50%
Flame detectors response threshold	10 m in case of fire with an area equivalent to that of a 0.1 m^2 kerosene fire
Operating temperature	-25 ÷+55 °C for ИПР (IPR) and ИПТМ (IPTM) sensors 0 ÷+40 °C for ЦП (TsP), ВПИ (VPI), ПСИ (PSI) and ЦПИ (TsPI) devices 0 ÷+45 °C for the rest of devices, detectors, sensors and annunciators
Relative humidity	98% at 35 °C
Average service life	12 years

Meridian RPF JSC 197198, Russia, St.-Petersburg, Blokhina St. 19
ph.: +7 (812) 602-03-52 fax: +7 (812) 233-94-07 info@npfmeridian.ru

JOINT STOCK COMPANY
CONCERN MORINFORMSYSTEM-AGAT

КОРПОРАЦИЯ
МОРСКОГО
ПРИБОРОСТРОЕНИЯ

JOINT STOCK COMPANY
RESEARCH AND PRODUCTION FIRM
MERIDIAN

SIRENA–MK

ADDRESSABLE FIRE ALARM SYSTEM

+7 (812) 602-03-52
https://npfmeridian.ru

SIRENA–MK
ADDRESSABLE FIRE ALARM SYSTEM

Sirena-MK Addressable Fire Alarm System is designed to receive and process fire detector signals, display data on the fire situation in the monitored premises, monitor the status of fire doors (firefighting devices) in the protected premises, generate triggering pulses for fire-extinguishing control devices and transmit information to the central monitoring console.

THE SYSTEM CAN PERFORM THE FOLLOWING FUNCTIONS

- receive and process signals from fire detectors;
- trigger actuator control devices;
- generate loop damage alert;
- transmit information to PC and central monitoring console.

Depending on configuration, the system can also provide protection against unauthorized access.

THE SYSTEM INCLUDES

- ЦП (TsP) central device that provides power supply to the components of the system, interrogates addressable devices and detectors and receives their answers, communicates with external interfacing devices;
- ИП (IP) information device that detects the exact location of fire breakout;
- АП (AP), ЭП (EP), ПП (PP) addressable devices with intrinsically safe power circuit for detectors monitor non-addressable threshold detectors and transmit the received data to ЦП (TsP) device;
- detectors of various kinds (heat, smoke, combined) and manual call-points.

MAIN SPECIFICATIONS

Number of addresses	Up to 64 (20 ЭП (EP) devices or 3 ПП (PP) devices)
Loops in ЭП (EP) device	1 loop for active detectors and 1 loop for passive detectors
Loops in ПП (PP) device	8 loops for active detectors and 8 loops for passive detectors
Number of detectors per loop	Up to 20 active, up to 40 passive
Power supply:	
Main	220 V 50 Hz
Backup	24 V
Power consumption, not more than	60 VA when powered from the grid, 30 W when powered with a 24 V source
Operation:	
Operating temperature of ЦП (TsP) and ИП (IP) devices	-5 ÷ +55 °C
Operating temperature of ЭП (EP) and ПП (PP) devices	-50 ÷ +55 °C
Case protection level as per GOST 14254	ЦП (Tsp) and ИП (IP) – IP 20 (IP 22 for use on vessels), ЭП (EP) and ПП (PP) – IP 54
Service life	25 years

Meridian RPF JSC 197198, Russia, St.-Petersburg, Blokhina St. 19
ph.: +7 (812) 602-03-52 fax: +7 (812) 233-94-07 info@npfmeridian.ru

JOINT STOCK COMPANY
CONCERN MORINFORMSYSTEM-AGAT

КОРПОРАЦИЯ
МОРСКОГО
ПРИБОРОСТРОЕНИЯ

JOINT STOCK COMPANY
RESEARCH AND PRODUCTION FIRM
MERIDIAN

SIRENA-MS

ADDRESSABLE FIRE ALARM SYSTEM

+7 (812) 602-03-52
https://npfmeridian.ru

SIRENA–MS
ADDRESSABLE FIRE ALARM SYSTEM

Sirena-MS Fire Alarm System for small displacement vessels is intended for use in objects regulated by Russian Maritime Register of Shipping (RMRS) and other classification societies.

FEATURES

- The System works with addressable-analogue detectors connected to central device ЦПК (64 addressable devices in 4 lines)
- The addressable devices can be connected in a radial line (with one-sided connection) and in a loop (two-sided (circular) connection).
- The System's devices are made according to the requirements of "Rules of classification and construction of maritime vessels", "Rules of technical supervision over the construction of vellsels and making of materials and items for vessels" under technical supervision of RMRS.
- Data exchange with interfacing systems via RS-485 digital interface. The scope of data will comply with the interface protocol developed for the object.

MAIN SPECIFICATIONS

Address capacity	Up to 64 (expandable)
Data exchange interface	RS-485
POWER SUPPLY	
Main	24 V
Emergency	24 V
Max. power consumption of device ЦПК	30 W
OPERATION	
Normal temperature for device ЦПК	from 0 to +40 °C
Case protection level of device ЦПК	IP 22
Case protection level of detectors	ДГ1, ДТЗ, РИ – IP 30 ДТС – IP 55 П, РИ, ДТЗ – IP 56
Service life	25 years

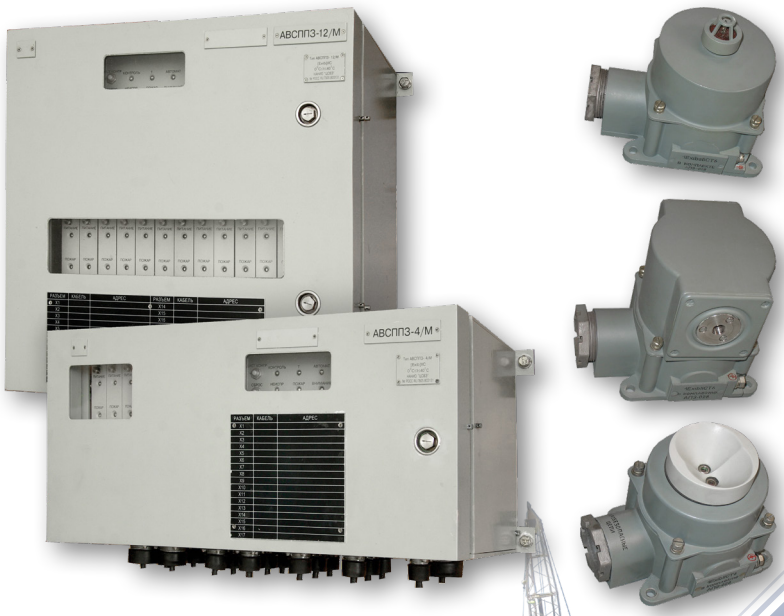
Meridian RPF JSC 197198, Russia, St.-Petersburg, Blokhina St. 19
ph.: +7 (812) 602-03-52 fax: +7 (812) 233-94-07 info@npfmeridian.ru

JOINT STOCK COMPANY
CONCERN MORINFORMSYSTEM-AGAT

КОРПОРАЦИЯ
МОРСКОГО
ПРИБОРОСТРОЕНИЯ

JOINT STOCK COMPANY
RESEARCH AND PRODUCTION FIRM
MERIDIAN

KARAT-E



FIREFIGHTING SYSTEM

+7 (812) 602-03-52
https://npfmeridian.ru

KARAT–E
FIREFIGHTING SYSTEM

The Karat-E quick-acting automatic triggering system for firefighting equipment is intended for objects regulated by the Russian Maritime Register of Shipping. It generates signals to automatically trigger firefighting equipment and produce warning in case of open flame, temperature or pressure build-up above the preset limits in the protected compartments. The system is designed to be used as part of fire and explosion suppression systems for maritime objects.

SYSTEM CONFIGURATION

- ПСУ-4 (PSU-4), ПСУ-12 (PSU-12) devices;
- ТА (TA), ДА (DA), ИКА (IKA) sensors;
- ПО (PO) annunciator device.

FEATURES

- Possibility of use in explosion hazard compartments.
- Special algorithm of false triggering protection.

MAIN SPECIFICATIONS

System structure	Modular, defined by the object's designer
Power supply	380 V 50 Hz
Power consumption of PSU device with 12 sensors, not more than	0,1 kVA
Warm up time, not more than	1 s
IKA sensor equivalent sensitivity at 0.1 m^2 flame island caused by burning kerosene	10 m
IKA sensor coverage angle	90°
TA sensor threshold value	65 °C
Above-atmospheric pressure increase in a protected compartment that causes DA sensor actuation	0.08 $(^{+0,02}_{-0,01})$ kg/cm^2 (with pressure build-up rate not less than 1 kg/cm^2 per second)
False actuation protection	Available
Operating temperature	0 ÷ +45 °C
Relative humidity	98% at +35 °C
Explosion-proof design	Available
Data exchange standard	RS-485

Meridian RPF JSC 197198, Russia, St.-Petersburg, Blokhina St. 19
ph.: +7 (812) 602-03-52 fax: +7 (812) 233-94-07 info@npfmeridian.ru

JOINT STOCK COMPANY
CONCERN MORINFORMSYSTEM-AGAT

КОРПОРАЦИЯ
МОРСКОГО
ПРИБОРОСТРОЕНИЯ

JOINT STOCK COMPANY
RESEARCH AND PRODUCTION FIRM
MERIDIAN

IBS

INTEGRATED BRIDGE SYSTEM

+7 (812) 602-03-52
https://npfmeridian.ru

IBS
INTEGRATED BRIDGE SYSTEM

Integrated Bridge System (IBS) is designed to ensure automated ship (vessel) control and increased navigation safety, combined with a smaller crew and less electronic equipment on the bridge.

FEATURES

- Optimal solution for ship and vessel upgrading due to the up-to-date ergonomics and design of control facilities, information display technology, system and circuit engineering of automated control systems.
- When designing a ship or a vessel, IBS with a variable integration with other systems can be developed to meet the customer's requirements.
- Various types of sections are available for IBS configuration to match the bridge profile.

IBS PERFORMS THE FOLLOWING TASKS

- navigation, safe ship steering and maneuvering achieved through automated and semi-automated control of ship movement and position; trial maneuvering as well as generation of ship movement trajectory during maneuvering with the check for near collision with other ships or vessels and nautical threats; automatic warning in case of danger;
- integration of navigation data, surface surveillance and ship movement parameters received from various data sources and integrated ship systems (GPS/GLONASS, ship log, echo-sounder, gyro- and magnetic compasses, meteorological sensors, etc.), further identification and display of data on multi-function screens;
- control over all types of ship communications (internal and external) to use them efficiently;
- control and monitoring of the main and auxiliary propulsion systems;
- integrated control and monitoring of auxiliary systems of a ship (navigation lights, interior lighting, transmission of liquids, video surveillance, emergency warning system, etc.);
- information support of ship (vessel) damage control and crew awareness of the ship and life-support system status, as well as prediction of further situation.

MAIN SPECIFICATIONS

Dimensions (WxHxD)	3200x1135x2150 мм
Product weight	Not more than 550 kg
Structural weight	Not more than 180 kg
Power consumption:	
Two-wire isolated mains with a voltage of 27 V and supply from DC generators and a rectifier/charger unit (main supply)	Not more than 5.0 kW
Single-phase AC mains with a voltage of 200 V 50 Hz and a neutral conductor (backup supply)	Not more than 2.0 kW
Two-wire isolated mains with a DC voltage of 24 V and battery supply (emergency supply)	Not more than 4.0 kW
MTBF	20,000 h
Total service life (until discarded)	15 years

Meridian RPF JSC 197198, Russia, St.-Petersburg, Blokhina St. 19
ph.: +7 (812) 602-03-52 fax: +7 (812) 233-94-07 info@npfmeridian.ru

JOINT STOCK COMPANY
CONCERN MORINFORMSYSTEM-AGAT

КОРПОРАЦИЯ
МОРСКОГО
ПРИБОРОСТРОЕНИЯ

JOINT STOCK COMPANY
RESEARCH AND PRODUCTION FIRM
MERIDIAN

PDK

PORTABLE DIAGNOSTICS KIT

+7 (812) 602-03-52
https://npfmeridian.ru

PDK
PORTABLE DIAGNOSTICS KIT

Portable diagnostics kit (PDK) for evaluation of technical condition (TC) of a diesel engine is a hardware-and-software suite used for diagnostics of technical condition of diesel engine's main elements and for generation of advisory about the objects condition at its complex maintenance.

PDK is an in-depth checking and diagnostics utility which serves as a source of extra information required for avoiding sudden failures and evaluates the extent of the diesel engine's routine maintenance.

FEATURES

PDK performs the following main diagnostic functions for evaluation of technical condition:

A) TC evaluation of the primary diesel of diesel generator (DG):

- evaluation of technical condition of individual cylinders of diesel piston components and fuel equipment based on indicator diagram analysis;
- evaluation of adjustment quality of individual diesel cylinders;
- evaluation of technical condition of gas-air flow duct based on thermal gas dynamic parameters;
- evaluation of gas tightness of cylinders in a working engine;
- visual inspection (evaluation) of TC of valves, combustion chamber, cylinder bearing surface;
- evaluation of diesel lubricating oil quality;
- evaluation of metal content in the oil for early detection of high wear in diesel elements;
- detection of diesel and generator misalignment in a working DG based on vibration parameters;
- evaluation of diesel and generator alignment quality in an idle DG;
- generator bearings' TC evaluation based on vibration parameters;

B) TC evaluation of the electrical part of DG diesel:

- check of electrical insulation;
- check for absence of breakdowns and shorted windings;
- evaluation of rotating parts balancing;
- evaluation of fouling in ventilation ducts, generator inner parts and cooling cavities of generator air cooler;
- control system health check;
- evaluation of wear of mechanical parts of automatic circuit breakers;
- rectifier status check;
- contact joints status check;
- water cooling system status check.

Meridian RPF JSC 197198, Russia, St.-Petersburg, Blokhina St. 19
ph.: +7 (812) 602-03-52 fax: +7 (812) 233-94-07 info@npfmeridian.ru

JOINT STOCK COMPANY
CONCERN MORINFORMSYSTEM-AGAT

КОРПОРАЦИЯ
МОРСКОГО
ПРИБОРОСТРОЕНИЯ

JOINT STOCK COMPANY
RESEARCH AND PRODUCTION FIRM
MERIDIAN

START

INTEGRATED FLIGHT CONTROL CONSOLE

+7 (812) 602-03-52
https://npfmeridian.ru

START
INTEGRATED FLIGHT CONTROL CONSOLE

Automated ship-bourne helicopter flight control system is designed to increase safety and efficiency of helicopter crew command and control at all the stages of mission.

Integrated Flight Control Console (IFCC) installed at the Aircraft Controller's post can substitute a large amount of various equipment that use different methods of data transmission, processing and display.

IFCC not only serves for reception, processing and display of data in an operator-friendly format enabling him to deal with a larger volume of data, but also generates recommendations for decision-making in a rapidly changing environment both in the air and on the ship's (platform) helideck.

Ship-bourne helicopter automated control system interacts closely with ship's data-handling and control system in a real-time mode, which ensures safe flights and successful accomplishment of helicopter missions, as well as accurate and well-coordinated operation of all ship facilities involved in flight support actions.

FEATURES

- Automation of Air Controller's tasks during flight planning and preparation, take-off, en-route flight, land approach and landing on the ship's (platform) helideck;
- Logging, storage, playback and display of recorded data on flights and Aircraft Controller's actions, as well as its output to external media;
- The system can function both under control of the ship's (platform) data handling and control system, and autonomously;
- The following data types can be displayed in any combination: primary and secondary radar data, video and cartographic (chart) data;
- The system ensures helicopter crews command and control enabling designation of responsibility zones and transfer of helicopter control from one control station to another.

MAIN SPECIFICATIONS

Maximum number of aircraft simultaneously controlled by the system	6
Maximum number of aircraft types simultaneously controlled by the system	5
Maximum number of simultaneously processed individual targets	Depends on sensors performances
System response time in case controlled parameters are beyond permissible limits or in case of a conflict situation	Not more than 1 s
System response time to Aircraft Controller's actions	Not more than 1 s
Validity level of recommendations generated	Not less than 0.9
MTBF	Not less than 2,000 h

Meridian RPF JSC 197198, Russia, St.-Petersburg, Blokhina St. 19
ph.: +7 (812) 602-03-52 fax: +7 (812) 233-94-07 info@npfmeridian.ru

JOINT STOCK COMPANY
CONCERN MORINFORMSYSTEM-AGAT

КОРПОРАЦИЯ
МОРСКОГО
ПРИБОРОСТРОЕНИЯ

JOINT STOCK COMPANY
RESEARCH AND PRODUCTION FIRM
MERIDIAN

CARDIO–MERIDIAN

PORTABLE CARDIODIAGNOSTICS DEVICE

+7 (812) 602-03-52
https://npfmeridian.ru

CARDIO–MERIDIAN

PORTABLE CARDIODIAGNOSTICS DEVICE

Cardio-Meridian is a portable hand-held device for diagnosing and detecting cardiological pathologies at the earliest stages, thus reducing the risk of developing heart disease.

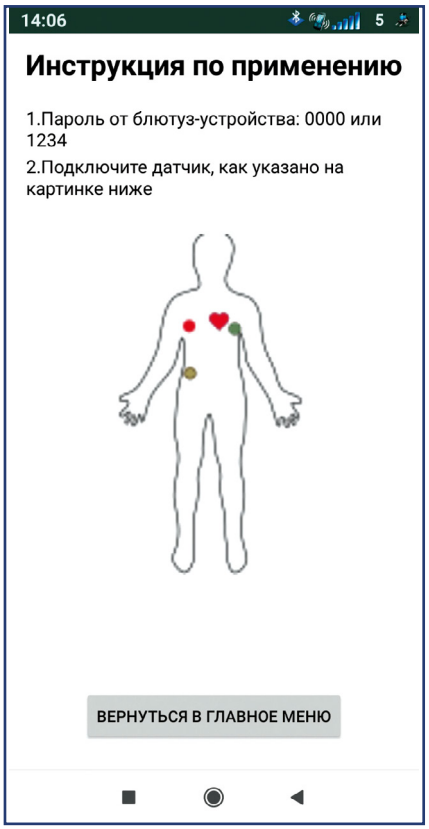
Cardio Meridian does not only record and amplify the electrocardiogram, but can also store ECGs in smart phone's memory, displaying the traces and playing the audio. With Cardio Meridian, you can also send ECGs to your doctor via the Internet or GSM.

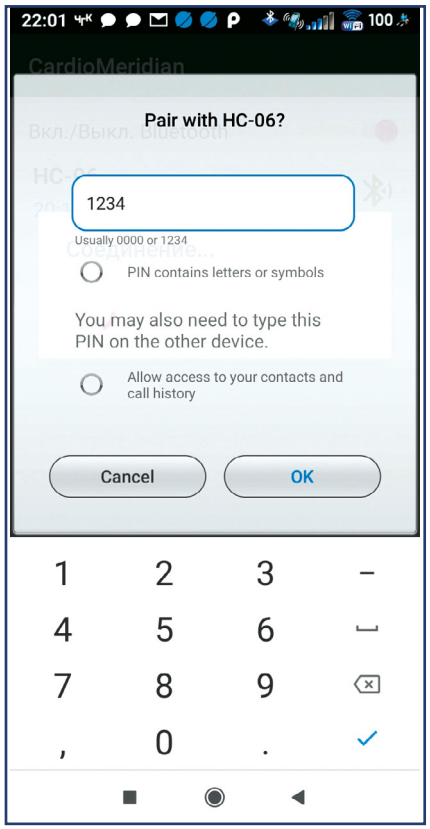
Over the longer term, this approach allows to create a specialized cloud-based database that can be used to analyze cardiovascular diseases in each of the country's regions where such devices are used.

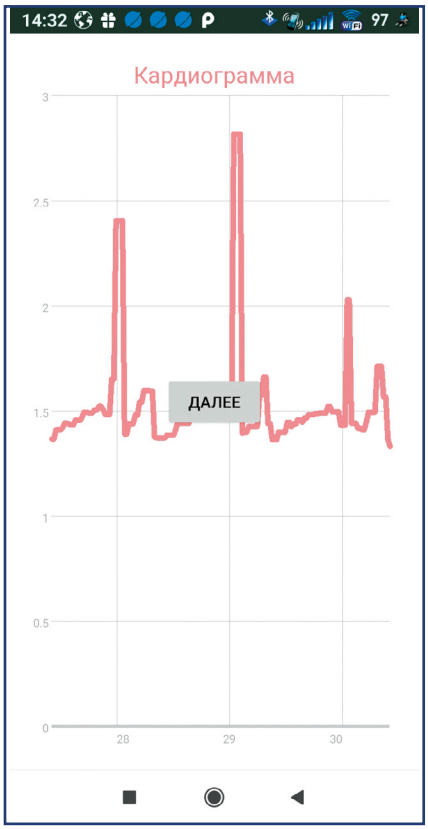
Cardio-Meridian can be used both for recording and analyzing a one-time ECG, produced using special software in a smart phone, and for long-term monitoring of the user's heart on the go, without disrupting the daily activities.

FEATURES

- Wireless – works via Bluetooth using the mobile app installed on a smart phone
- User-friendly – no special skills required to use the app or device
- Long-lasting – built-in battery provides up to 8 hours of autonomous operation
- Adaptable – enables the cooperation of the patient and cardiologist
- Life-protecting – especially relevant for remote areas where it may be difficult to receive emergency medical aid
- Portable – compact and lightweight
- Ergonomic
- Simple – uses standard electrodes
- ECG logging







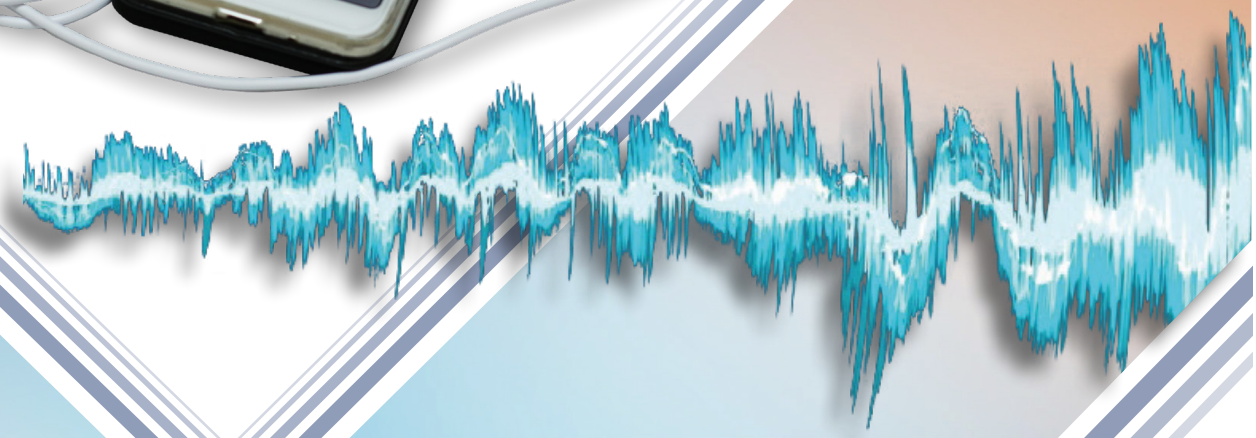
Meridian RPF JSC 197198, Russia, St.-Petersburg, Blokhina St. 19
ph.: +7 (812) 602-03-52 fax: +7 (812) 233-94-07 info@npfmeridian.ru

JOINT STOCK COMPANY
CONCERN MORINFORMSYSTEM-AGAT

КОРПОРАЦИЯ
МОРСКОГО
ПРИБОРОСТРОЕНИЯ

JOINT STOCK COMPANY
RESEARCH AND PRODUCTION FIRM
MERIDIAN

SPIRITUS – MERIDIAN



PORTABLE AUSCULTATION DEVICE

+7 (812) 602-03-52
https://npfmeridian.ru

SPIRITUS–MERIDIAN
PORTABLE AUSCULTATION DEVICE

"Spiritus-Meridian" is a portable device intended for real-time record and transmission of readings of the patient's respiratory organ auscultation and heartbeat into Bluetooth headphones of the doctor.

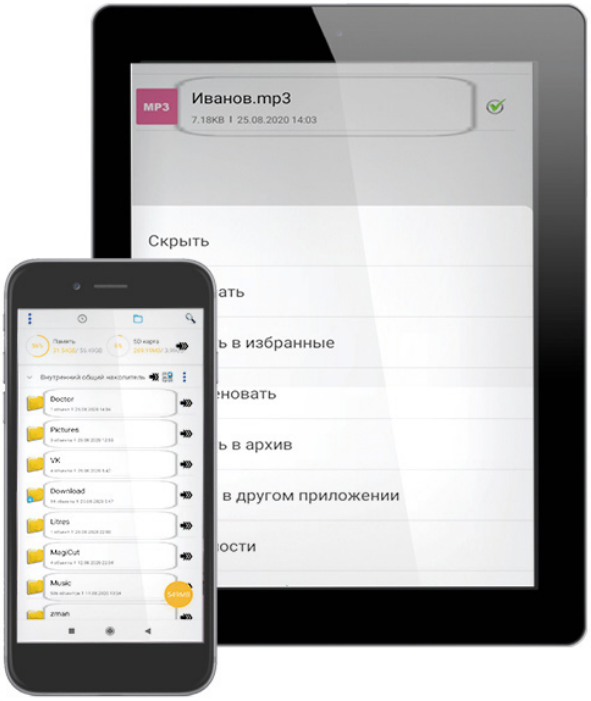
The received data for each patient are stored at a mobile platform.

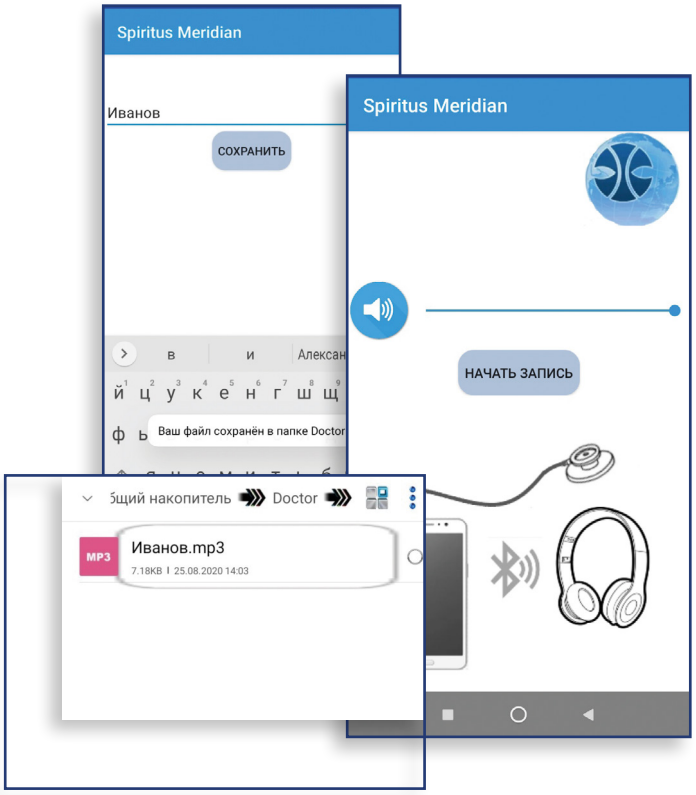
FEATURES

- Usable while wearing antichemical protection suit
- Easy to use
- Small size
- Noise cancelling
- Feedback from the doctor
- Work with database
- Lightweight and durable
- Comfortable in hand
- Standard thread for the membrane
- Firm fixation of the cable

APPLICATION FUNCTIONS

- Volume adjustment
- Session recording
- Bluetooth synchronization
- Telediagnostics





Meridian RPF JSC 197198, Russia, St.-Petersburg, Blokhina St. 19
ph.: +7 (812) 602-03-52 fax: +7 (812) 233-94-07 info@npfmeridian.ru