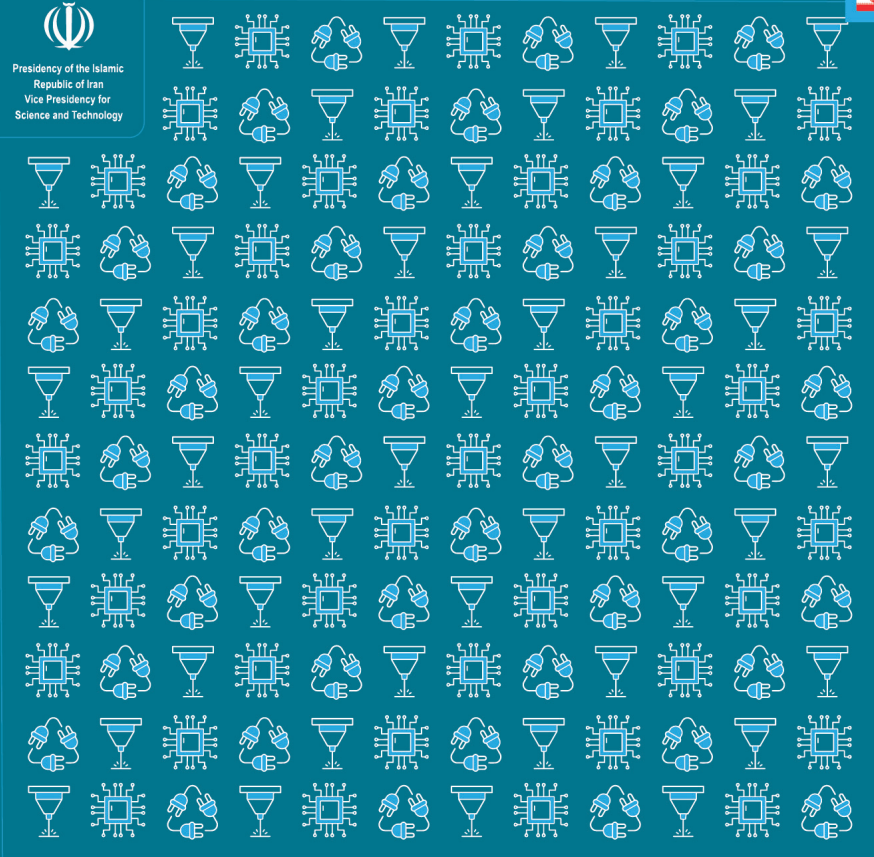




Presidency of the Islamic
Republic of Iran
Vice Presidency for
Science and Technology



Sixteenth Volume
ELECTRONICS

Knowledge-Based Products and Equipment

مجلس المدینة العلمیة

Knowledge-Based Products and Equipment
Electronics





Presidency of the Islamic
Republic of Iran Vice Presidency for
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Export Development &
Technology Transfer Fund

www.etdf.ir



www.ihit-expo.com

Knowledge-Based Products and Equipment Sixteenth Volume: **Electronics**

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Preface

One of the key factors in a nation's industrialization and economic complexity is technology. Complex economies can connect vast networks of individuals with relevant information to produce a variety of knowledge-based goods. Indeed, the types of goods or products that are ultimately supplied to international markets are taken into account when determining the complexity of an economy.

A knowledge-based economy is one in which the application of knowledge and information plays a significant role in shaping production and distribution, and where investments in knowledge-based businesses have drawn particular attention. Along with enhancing nations' competitiveness, the transformation of economies into knowledge-based economies has the potential to have a significant impact on international trade.

7000 knowledge-based businesses in Iran provide knowledge-based goods that are the result of the expertise and experience of professionals and university graduates. These businesses, which occasionally resemble enormous technology factories, sold more than 10\$ billion worth of goods last year and exported 1\$ billion or so to various nations. The Presidential Deputy for Science and Technology is recognized as the most significant authority for direction, leadership, and development of the technology area in Iran. It serves as a support organization for startups and knowledge-based businesses by finding and selecting these enterprises. This book, along with 19 other books, is a carefully curated selection of goods with a track record or export potential that was put together using data provided by chosen businesses for presentation to foreign clients, business people, and government and academic officials interested in using these goods. To review the company's manufacturing and distribution records, access to technical knowledge and specialized human resources, production and export capacities, and after-sales services, two specialized and commercial committees were formed separately, and each committee reviewed the products in detail with the participation of technical and commercial experts.

In this procedure, specialized committees were held with the collaboration of the experts of the center of companies and knowledge-based institutions of the Deputy for Science and Technology, headed by *Dr Reza Asadi Fard* and Coordinated by *Engineer Mojtaba Houshmandzadeh*. In addition, *Engineer Mehdi Ghaleh Noei* and *Engineer Ruhollah Estiri* presided over commercial committee meetings, which also included businessmen from the private sector, and I want to express my gratitude to these two groups for their work and assistance.

I also want to appreciate the project manager, *Zahra Afzali*, who has taken on a lot of responsibility and given close attention to the project's design and development from the beginning with innovative ideas.

I also think it's important to recognize and express my gratitude to my other colleagues for their efforts in gathering, reviewing, contacting firms, selecting, and rewriting texts, and finally editing and creating this book:

Project monitoring and editing team: *Mohammad Torabi, Fereshte Elahi*

Evaluation team: *Yaser Shadan, Seyed Rasoul Hosseinia, Mehran Zeinalipour*

Design team: *Mohammad Hossein Pourdabbaq, Masoud Khalili*

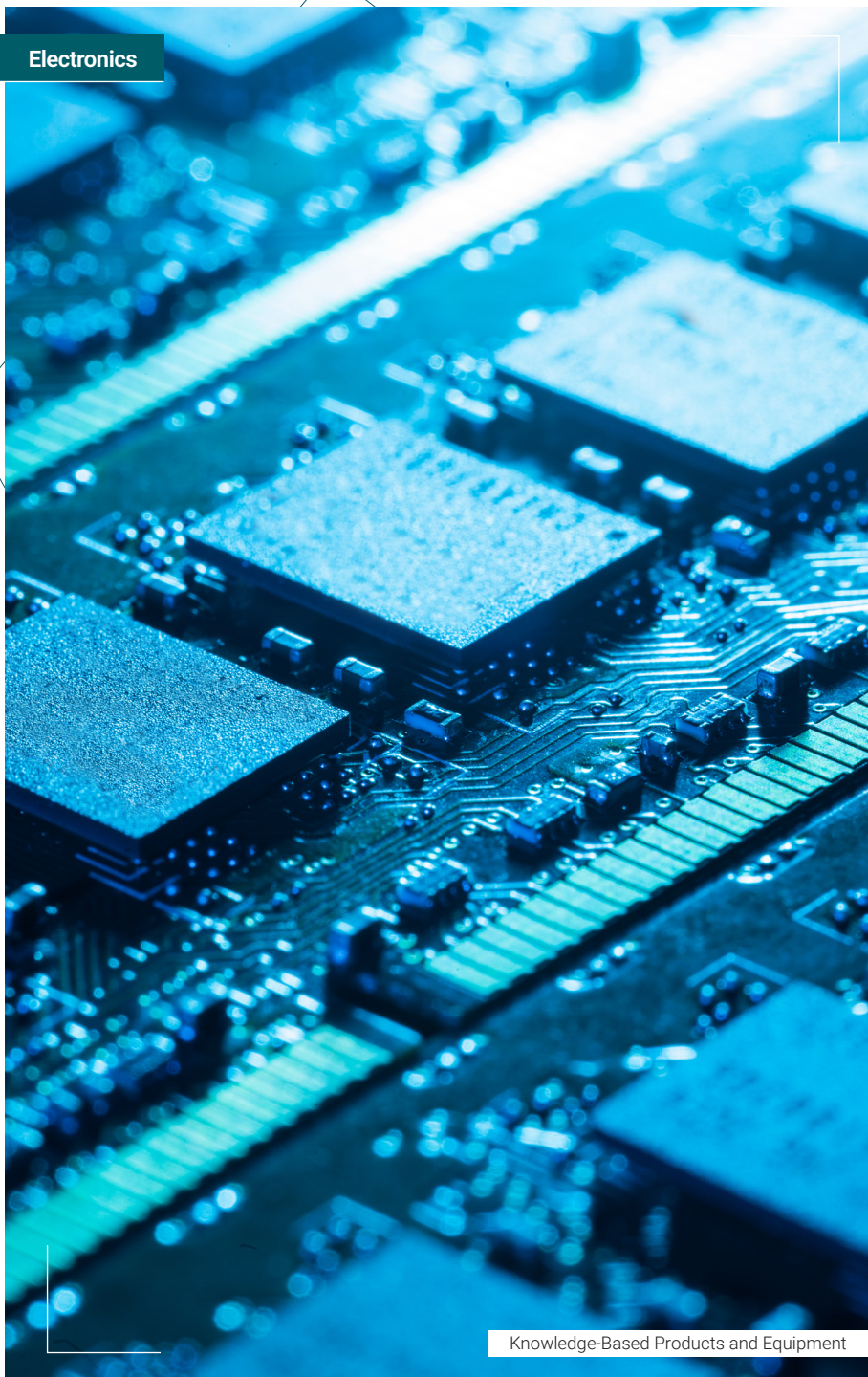
I want to underline that the aforementioned goods may be offered in a variety of ways in the country of destination, including export of end products, export of semi-finished and assembled products at the destination, joint production in the destination country and other economic cooperation. In each of the aforementioned scenarios, the Export Development and Technology Exchange Fund is prepared to co-invest in the target countries and guarantee the purchases as a financial sponsor of knowledge-based export enterprises.

The book's conclusion also includes a list of export management firms authorized by the Deputy for Science and Technology for communication, Iran Houses of Innovation & Technology (iHiTs), located in several countries, and commercialization and technology transfer agencies. Finally, I am hoping that this book will be beneficial to the readers and provide them with a thorough grasp of Iranian technological advancements.

Regards,
Mehrdad Amani Aghdam
CEO of Export Development and Technology Transfer Fund

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Electronics



Knowledge-Based Products and Equipment

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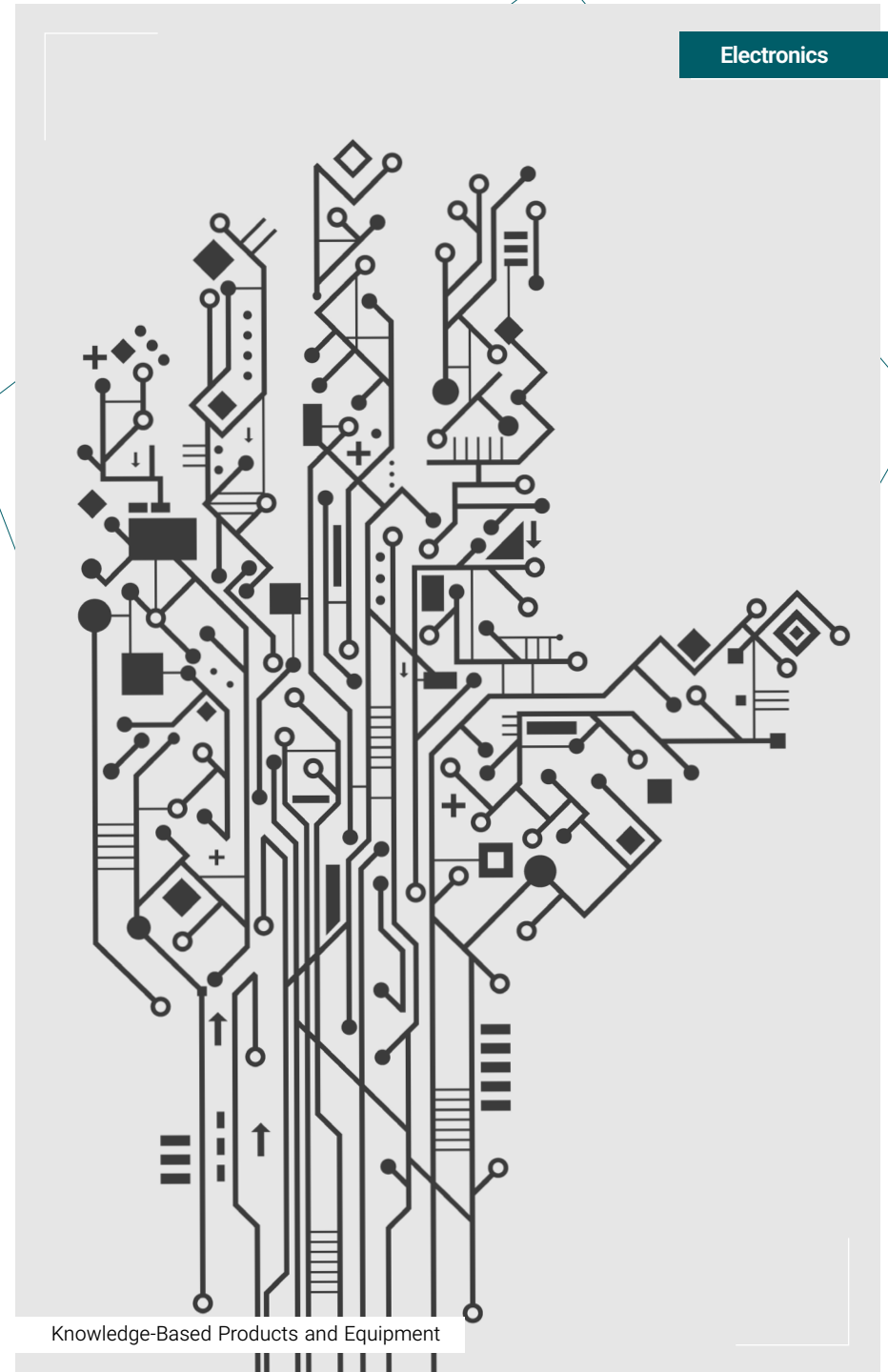
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Introduction

The Origin of Industry and Export in The Eyes of Iranians

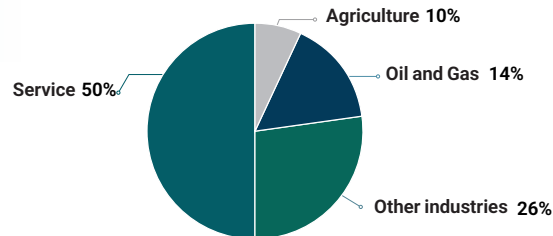
The ancient land of Iran has long been the source of knowledge and industry, and Iranians have played a significant role in the development, evolution and promotion of science and human awareness. Most historians of the world believe that most of the advances in science and human civilization are owed to Iranian civilization and the most brilliant works of art and the highest industrial levels has come from the minds of Iranians. Metalworking industries, agricultural industry, pharmacy and alchemy with themes including tile glazing, carpet dyeing, fabrics and glass were some of the industries that were considered by ancient Iranians. In parallel with the special attention to the development of industry, the history of mutual trade relations between Iranians and other civilizations in East and Central Asia, Europe and Africa has a long history, and Iranians have played a significant role in the expansion of global altruism since long ago by being on the route of the Silk Road and maritime trade.

We Iranians today, like our ancestors, consider industry, art and production in our ancient land to be a transformative and constructive place, and we consider the development of technological interactions and the trade of knowledge-based industrial products with other countries as an opportunity for friendship and the expansion of ties.

Industry and Export in Today's Iran

Industrial development has a very important place in the plans and policies of the Islamic Republic of Iran due to the creation of value added, job creation, increase in exports and reduction in imports, and the transition from an economy dependent on oil and mineral raw materials to an industrial and manufacturing economy, especially an economy dependent on new technologies, is a grand plan that has been adopted for this purpose. Currently, 50% of Iran's gross domestic product is allocated to services and another 50% to industry and manufacturing, which includes 10% agriculture and food industry, 14% oil and gas industry, and 26% other manufacturing industries.

The Share of Various Activities in Iran's GDP

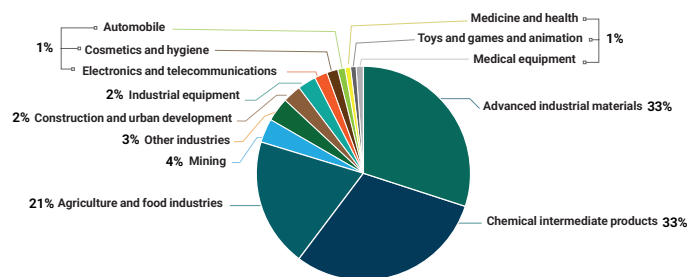


In the meantime, various industries such as pharmaceuticals, medical equipment, construction, communications and telecommunications, energy, mining, chemicals, etc. have a special share of Iran's gross domestic product, and their production, in addition to covering a considerable amount of country's domestic needs, are exported to various destinations.

According to World Customs Organization data, in 2021, the Islamic Republic of Iran had exports equal to 75 billion dollars, almost half of which is allocated to non-oil industries and processed industrial products. Advanced industrial materials, chemical intermediate products, agricultural products and food industry are all among the biggest exporting industries with more exports.

Iran's Exports in 2021

Ref: Trade Statistics for International Business Development ¹



¹ www.trademap.org

Regarding the main export destinations of Iran, it should be noted that China, India, Indonesia, Russia, Uzbekistan, Ghana, Germany and South Africa, as well as among the regional neighbours, Iraq, Turkey, UAE, Afghanistan, Pakistan, Oman, Turkmenistan, and Azerbaijan account for the largest dollar value of imports from Iran.

Where the New Technologies Stand in Iran's Industry

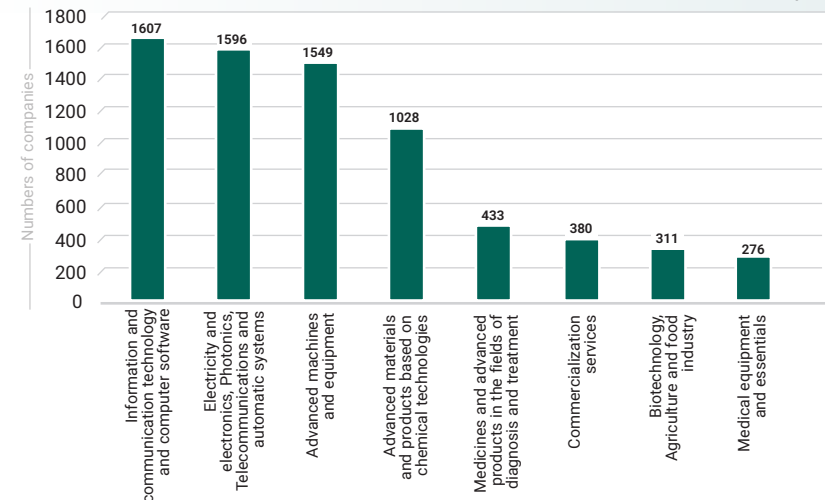
Paying attention to the development of new technologies, commercialization and its influence on manufacturing industries has caused the Islamic Republic of Iran to experience a growing progress in this field in the last decade; An issue that has taken place in Iran in the form of the development of knowledge-based enterprises. Based on this, the meaning behind knowledge-based enterprise is as follows:

A private company that produces products or provides services that have the following three features:

1. The product or service provided by the company has a high or medium to high technology level and its technical knowledge has a significant technical complexity (technology level condition).
2. The product or service design in the company is based on internal research and development or technology transfer (Research and development-based design condition).
3. The company is able to produce and provide the mentioned goods or services to the market (production condition).

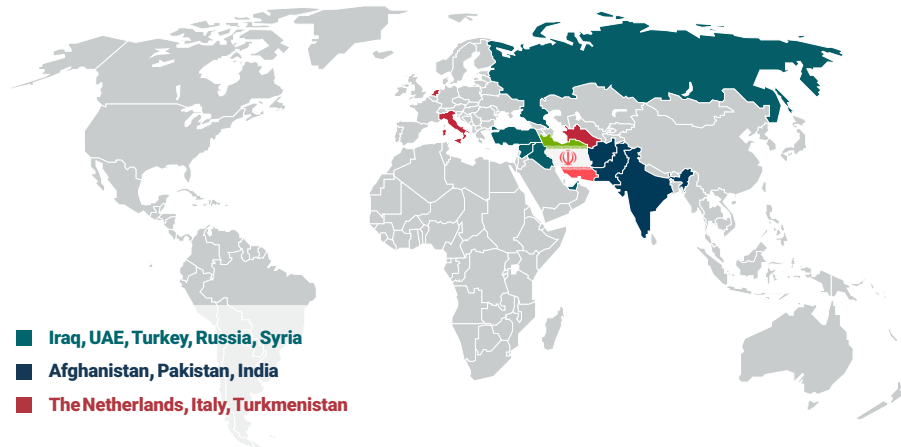
Currently, more than 7 thousand knowledge-based enterprises in Iran are producing products and providing services in the field of various technologies. These companies produce more than 15,000 products or services in total, and their direct employees, which generally include people with a high level of education, are around 250,000 people.

The Number of Knowledge-Based Companies - Technology Fields



The export of Iran's knowledge-based enterprises has been growing in the last 5 years, and these companies currently account for about %2 of Iran's non-oil exports.

The Largest Export Destinations of Iranian Knowledge-Based Enterprises in the Last 5 Years



The Status of Knowledge-Based Products in Electronics

The production of electronic equipment and parts is of paramount importance due to the variety and wide application in different industries and sectors. What makes this issue doubly important is the use of electronic products in different industries, and this arises from the infrastructural nature of this industry. Therefore, in the last decade in Iran, the production of basic products and special attention to industrial companies in the field of electronics has been accompanied by significant growth.

According to the reports of the Central Bank, the share of the energy sector (which also includes electricity industry) in the GDP is around %8.2 and this industry plays a crucial role and is of utmost importance in other sectors (especially the industries with %26 share of GDP). Furthermore, other industries such as petrochemicals, steel, construction, medical equipment, automotive, oil and gas, etc., are heavily dependent on this sector.

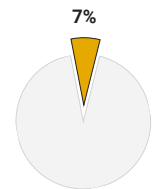
The vast majority of commodities in this industry are consumed in Iranian domestic industries. However, in the last few years, almost 260 million dollars, which comprises about 0.5 percent of Iran's total export has been allocated annually to the electricity industry, whose significant portion is related to electronic equipment.

Due to the great consumer market and the dependence of all industries without exception

on the electricity industry and the power grid (a part of which are the products and equipment related to electronics), the foundations for the growth of many knowledge-based technologies and products have been provided in it. The activity of more than 950 Iranian knowledge enterprises and the supply of more than 1600 technological products demonstrates this point.

In the last few years, considering the special attention to the self-sufficiency and maximum development of country on national scale, the activity and production of knowledge enterprises related to the electricity industry, which also include the electronics sector, has been accompanied by good growth, and allocation of about %12 of Iran's knowledge-based production and employment to this field confirms this issue. Finally, regarding the export of knowledge-based products of this industry, it needs to be mentioned that a total of 210 million dollars worth of products of knowledge enterprises active in the field of electronics have been exported outside Iran in the last 5 years and the countries of Iraq, China, Uganda, Turkmenistan, Turkey, The UAE, Kazakhstan, Afghanistan, Armenia and Russia have been the main export destinations of these companies, respectively.

The Percentage of Electronics Companies from All the Knowledge-Based Enterprises

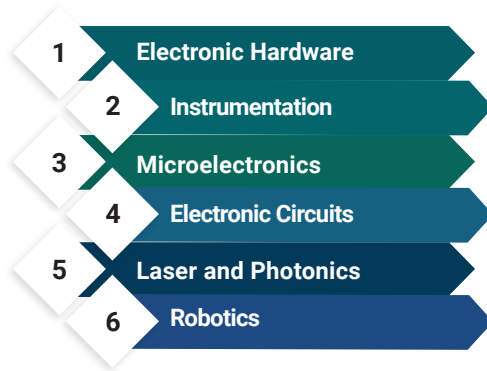


The Main Export Destinations of Iranian Knowledge-Based Enterprises in the Field of Electronics



The Division of Knowledge-Based Products in Electronics

As previously mentioned, the existence of an increasing industrial need for this field in Iran, its basic and inter-industry position, as well as the wide application of this industry, have provided the foundation for the growth of many knowledge-based technologies and products in it. In this book, products have been collected that can be divided into the following categories:



The following describes each category and their subcategories in order to give a general understanding of these areas.

1

Electronic Hardware

Electronic hardware is one of the key industrial requirements, to the extent that it can be an effective prerequisite for the development of other technologies. These products have a wide variety and their special feature is the ability to be used in different industries. The capabilities of knowledge enterprises in the production of electronic hardware include the following subcategories:

- **First Section | Monitoring and Data Acquisition Equipment:**

All electronic equipment and hardware used in various industrial processes for the purpose of monitoring and observing the process, entering and exiting of raw or production materials, inspection, measurement and detection, fall under this category. These products are produced in two types, digital or analog, and their main task is monitoring.

- **Second Section | Automation and Intelligentization:**

Automation arises from using machines to do work that was once done by humans, and intelligentization is used to refer to replacing human with machines. The automation and intelligentization equipment introduced in this subcategory are designed to control and monitor various processes in industries such as water, electricity, oil, gas, petrochemical, chemical, food, automotive, etc.

- **Third Section | Computer Equipment:**

In this section, all the equipment that can be connected to computers as modules and peripherals are presented. Among these pieces of equipment can be mentioned printers, user interfaces for the visually impaired and simulators of processes such as driving.

[Start chapter at page 22](#) »

2 Instrumentation

Instrumentation is a collective term for instruments that measure, transmit, display, record and control important physical parameters depending on the type of quantity (such as pressure, temperature, flow rate, surface, etc.) according to the conditions and standards set. In fact, instrumentation forms the infrastructure of the control and automation system and include tools such as sensors, controllers, indicators, transmitters, recorders, etc. Instrumentation can be classified into two sections:

- **First Section | Precision Test Electronic Equipment:**

All electronic equipment that is used as a precision instrument or a part of it for measuring quantities such as density, pressure, optical field, electric current, thickness, etc., and is produced by Iranian knowledge enterprises, are introduced in this subcategory.

- **Second Section | Sensors:**

Sensors are used to measure various quantities such as temperature, humidity and pressure. In fact, every precision instrument has a number of sensors whose function is to convert physical parameters into electrical signals, and the output of a sensor is an analog or digital signal. Various kinds of sensors are introduced in this subcategory.

[Start chapter at page 144 »](#)

3 Microelectronics

Electronic equipment on a micro scale is called microelectronic parts. This technology, which has entered the nano scale with the development of microprocessors in the last decade, is used in parts, receivers and circuits. In this section, knowledge-based products such as integrated circuits and layer depositing equipment are included, whose production process involves microelectronic technology.

[Start chapter at page 192 »](#)

4 Electronic Circuits

Electronic circuits are present in all electronic devices and equipment and it is one of the most widely used and diverse industrial equipment. In this section, the production, printing and assembly equipment of electric circuits are introduced.

[Start chapter at page 202 »](#)

5 Laser and photonics

A laser is a device that emits amplified light created through the process of induced emission of electromagnetic radiation. Laser is a product with industrial application and types of solid, liquid, gas and semiconductor lasers are used in various industries such as medical, military, laboratory, etc. The lasers introduced in this category are used in the equipment production process.

[Start chapter at page 210 »](#)

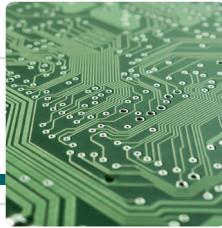
6 Robotics

Robotics includes the design, construction, operation and application of robots and requires computer systems, control, sensor feedback and information processing. The robots introduced in this section are used in the areas of measurement and inspection, repair and maintenance, security and safety.

[Start chapter at page 222 »](#)

Electronics

First Chapter Electronic Hardware



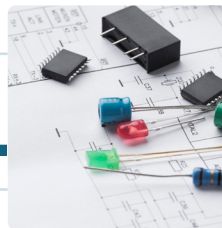
- Monitoring and Data Acquisition Equipment
- Automation and Intelligentization
- Computer Equipment

Second Chapter Instrumentation



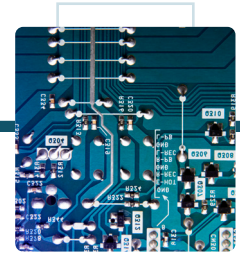
- Precision Test Electronic Equipment
- Sensors

Third Chapter Microelectronics

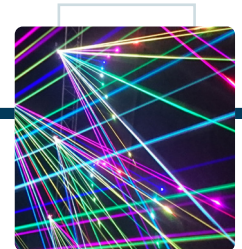


Fourth Chapter Electronic Circuits

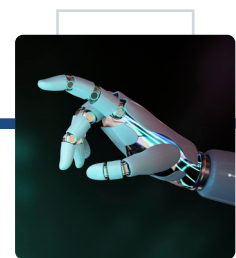
- Assembly Equipment



Fifth Chapter Laser and Photonics

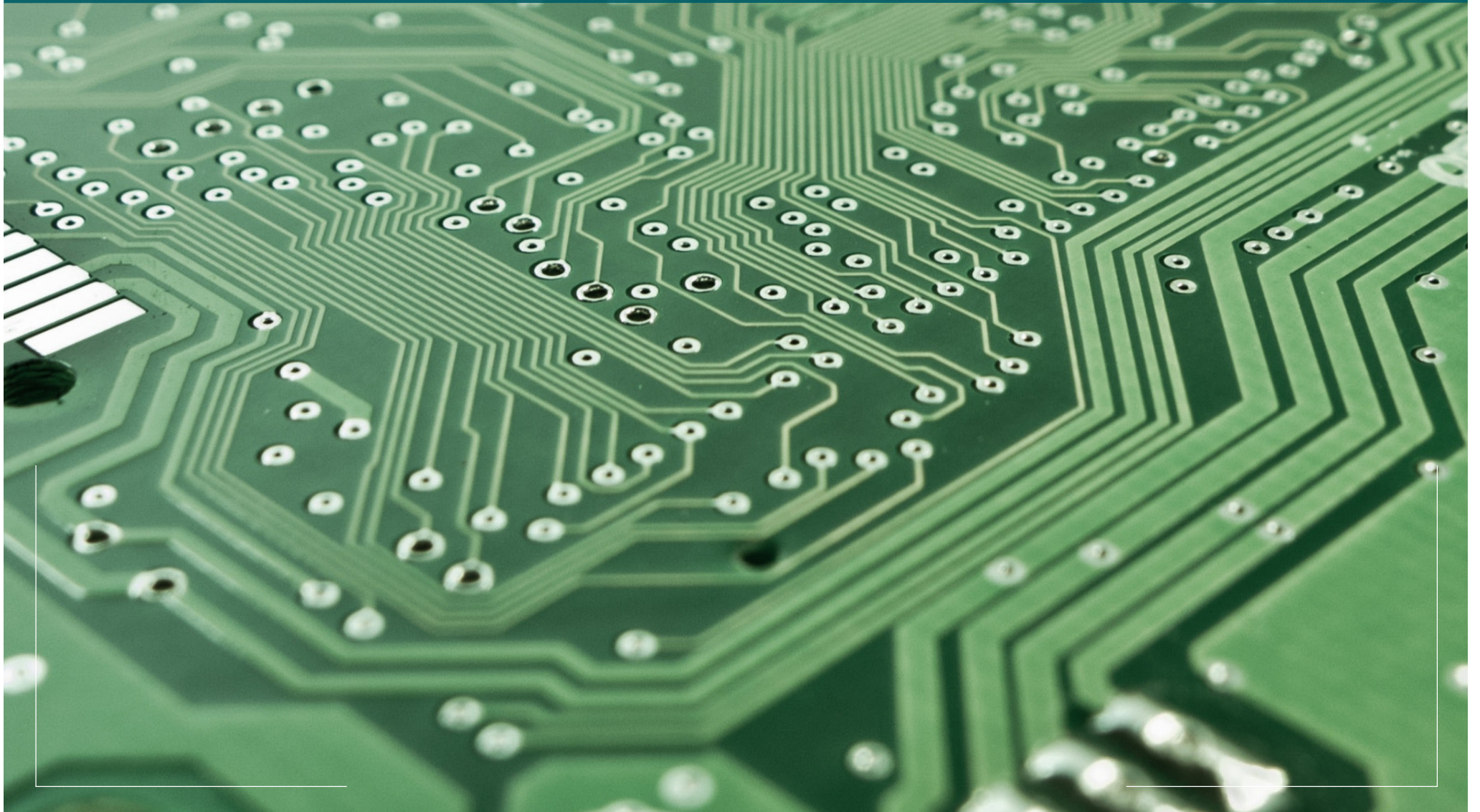


Sixth Chapter Robotics



First Chapter

Electronic Hardware



1st CHAPTER

First Chapter

Second Chapter

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Sixth Chapter

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Monitoring and Data Acquisition Equipment ○
Automation and Intelligentization ○
Computer Equipment ○



Application:

Measuring the temperature, pressure, humidity and wind parameters in power plants ,industrial centers and similar centers

➤ **Meteorological Monitoring System**

◆ Sanjesh Afzar Asia Co.

www.saa.ir



Product Introduction:

Since 2011, designing the meteorological monitoring system started in compliance with the standards of the Iran Grid Management Company (IGMC) in Sanjesh Afzar Asia Company. The meteorological monitoring system collects information from various sensors, records it in the memory and sends it to the central server through its communication module via GPRS. This device, with the simultaneous reading of three (or four) sensors, provides the user with the ability to get a more accurate estimate of the temperature of the monitoring area by averaging the information at three different points. Increasing the accuracy of measuring these parameters provides a more accurate analysis of the region's situation and weather conditions and makes decision-making more accurate for the officials who use the region.

Founded:

1999

This product is final B2B equipment.

Technical Specifications:

Sensor	Internal SD Card	Industrial enclosure	Touch screen display
Radiation Shield	2MB internal storage	Rackmount	5.5"

Advantages:

- * Reducing environmental effects such as sunlight, humidity, rain and dust penetration on the sensors
- * Sending information through current analog ports (20-4 milliamps)
- * Having the capability to simultaneously read sensors, recording and storing reports



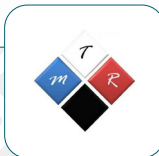
Application:

Online analyzers are measuring devices that are installed in the measurement location (production lines, water or wastewater treatment plants, water sources, measurement stations, etc.) and according to previous planning perform nonstop analysis of samples without the need for human resources.

➤ **Online Monitoring Analyzer**

🏠 Mobinab Tajhiz Rad Co.

www.mobinab.com



Product Introduction:

Online analyzers are measuring devices that are installed in the measurement location (production lines, water or wastewater treatment plants, water sources, measurement stations, etc.) and according to previous planning perform nonstop analysis of samples without the need for human resources.

Founded:
2015

This product is final B2B equipment.

Technical Specifications:

Input	Logger	Output
RS485, 4-20 mA	internal	Analog and Modbus

Advantages:

- * Designing and manufacturing transmitter and controller
- * Regression of electronic signals and chemical parameters
- * Automation of injection systems (pumps and valves)
- * Analysis automation
- * Designing and building the necessary structures for proper and standard installation



Application:

Checking and controlling environmental factors and electrical parameters in data centers, laboratories, telecommunications equipment, etc.

➤ Environmental Monitoring System

🏠 Ide Bekr Mobin Co.

www.ibm.co.ir



Product Introduction:

Environmental factors (such as heat, humidity, air flow, etc.) and electrical parameters (such as voltage, current, frequency, power, etc.) can be very destructive to electronic equipment or cause damage to sensitive information, and ultimately disrupt the performance of an organization. This system, using a diverse set of sensors that monitor the environment 24 hours a day, is able to detect unexpected events such as sudden temperature rise, water leakage, fire, sudden increase in air conditioning system pressure, voltage drop, sudden power surge, etc. and inform the responsible user as soon as possible through various warning methods such as sending SMS, making voice calls and sending e-mails. In such cases, it is also possible that the system intelligently follow a specific scenario to solve the problem by the relays built into the product. In addition, in this product, the values read by the sensors are interactively displayed to the user through a piece of web-based software. Finally, by using the various protocols supported by the product (SNMP, MQTT, ZBX Agent, etc.), the data collected from several devices is aggregated in high-level software. Such a system is referred to as RTU in the industry.

Founded:

1999

This product is final B2B equipment.

Technical Specifications:

Network specifications:

- * IPv4/IPv6
- * Modbus-TCP
- * MQTT
- * Web Interface

Advantages:

- * Equipped with a processor capable of non-stop operation (7/24).
- * Increasing battery voltage to produce all required voltages, using regulators in increasing and decreasing modes.
- * Producing an acceptable Web Application in a very low volume
- * Using RTOS in uC and SIM800 level programming
- * Using QT5 to generate interactive dashboards on the screen



Application:

Accurately measuring fluid flow in power plants, refineries and factories

➤ **Fluid Flowmeter**

🏠 Arman Fara Pajooan Co.

www.arman-afp.com



Product Introduction:

Flow is one of the most important measurements in the industry. Water, natural gas, steam, oil, hydrocarbons, chemicals or some samples of liquids, whose flow should be measured every day. To solve this need (Fluid Flow Calculation), the fluid flow calculator is used.

Founded:
1999

This product is final B2B equipment.

Technical Specifications:

Port	Board	Display
MODBUS	ARMLPC 1778 microcontroller	5.6" touch screen

Advantages:

- ✦ Instantaneously calculating and displaying power plant unit efficiency
- ✦ Calculating excellent compressibility coefficient
- ✦ Displaying curves and records of all parameters
- ✦ Storing the measured values in high-capacity memory (for several years)
- ✦ Very fast startup time after connecting the power supply (less than one second)



➤ Online Analyzer and Controller of Residual Chlorine in Water

◆ Sayal Abzardaghigh Mihaan Co.

www.sam-control.ir



Product Introduction:

The online residual chlorine analyzer is equipped with an internal intelligent PID control system and uses an amperometric cell without a membrane to measure residual chlorine in water. The sensor of this device is designed to work in harsh environments and different types of water and wastewater of different quality and can be installed at a distance of more than 300 meters from the central device. The function of this type of sensor is based on the electric current that occurs as a result of the chemical reaction between chlorine dissolved in water and the cathode and anode electrodes. By increasing the amount of residual chlorine in the water, the reaction speed increases and more current is created in the amperometric cell. The automatic chlorine injection control system of this device is designed in such a way that the operator only enters the requested amount of chlorine into the device and the processor system, by gradually learning the behavior of the network and sending control commands to the liquid or gas chlorination equipment, adjusts the injection amount at all hours of the day and night. Despite changes in consumption, changes in the volume and quality of raw water and other parameters will remain fixed.

Founded:

2011

Application:

Controlling and monitoring chlorine in various industries, including water & wastewater company, food, chemical, oil and gas and petrochemical industries, power plants, etc.

This product is final B2B equipment.

Technical Specifications:

Data logger	Caliberation periods	Degree of sensor protection	Measurement accuracy	Power consumption
MAX 4GB micro SD	>1000 H	IP 67	0.1 mg/Lit	<10 W

Advantages:

- * High product quality
- * Longlasting life and stability of the product
- * Reasonable and competitive product price

International Standards or Permissions:

- * IEC61326-1 2012
- * EPIL certificate



➤ Agricultural Water Supply Equipment Monitoring System

◆ Rahro Talash Javid Co.

Product Introduction:

By using the intelligent monitoring and control system of water supply equipment, it will be possible to control all equipment and water supply stations, including operators, etc., along with measuring and reading important parameters with high accuracy. In such a way that all the information is stored in the control center with web software and can be reported; Also, it is possible to provide command to the equipment. At the same time, all the devices can be controlled completely independently from the control center with mobile phones and can be defined in two levels of access: local user and regional supervisor. All settings of the devices are done remotely and there is no need to be on site. For all the measured parameters, there is the ability to define the lower limit and the upper limit, and if the limits are exceeded, the necessary warning will be sent by SMS. For passive defense, the system is designed in such a way that if the central server sleeps, all the operations and control of the equipment can be done only with a mobile phone, and in general, there is no need for the existence of a central server, except for recording information.

Founded:

1999

This product is final B2B equipment.

Technical Specifications:

Modem	Measurement accuracy	Dimensions	Weight
OnBoard	12 bit	20 × 30 × 40 cm	4.5 kg

Advantages:

- * 100 % remote control
- * High measurement accuracy
- * Ability to command by mobile and central server
- * Ability to work in harsh and sensitive weather conditions
- * Ability to set information recording from one minute to 1440 minutes

International Standards or Permissions:

- * IEC60870-5-104
- * IEC2012:22301



Application:

Marking, identification and information management of all types of heavy livestock in the I.R.Iran's Ministry of Agriculture - Jihad organizations, livestock farms, cattle farms, equestrian teams, etc.

➤ **Animal RFID Ear Tag**

🏠 Tapco (Tarashe Pardaze Pooya) Co.

www.tapco1.com



Product Introduction:

Today, to identify the animals individually and manage them better, it is necessary to have a special tag. Animal RFID Ear Tag is designed and manufactured according to the latest standards of the world for marking, identifying and managing the information of heavy livestock in different stages of keeping, rearing, milking, slaughterhouse and disease control.

Founded:
1999

This product is final B2B equipment.

Technical Specifications:

- * **Support:** systemic

Advantages:

- * Technically equal to similar foreign products
- * Reasonable price
- * Integrated system in terms of required hardware and software

International Standards or Permissions:

ICAR international certificate



Application:

Discovering valves, manhole cover, valves, network lines of facilities and joints in the utility industry and construction projects of the country

➤ **Metal Detector**

◆ **Farayand Argham Pardaz Co.**

www.fap-company.com



Product Introduction:

Metal detectors are the first products of Farayand Argham Pardaz company. One of the digital metal detectors is the ORAMI-II, which was designed upon the request of contractors in utility companies and the request for a cheaper, and simpler device to use in civil detection projects. Is. ORAMI-II is equipped with a smart LED display and is the best choice for contracting companies with small-sized projects and less complexity in implementation. This device is able to reveal missing valves and under the ground and asphalt valves up to a depth of 140 cm, and snow, rain, minerals and tree roots do not affect the performance of the device.

Main Export Destinations:

Japan, Emirates

Export History:

Up to 500,000 \$

Founded:

2001

This product is final B2B equipment.

Technical Specifications:

CPU	Frequency	Display	Sweeper speed	Weight
24	110 Hz	LED	1.5m/sec	2 kg

Advantages:

- * Designing audio signal active filtering circuits
- * Design noise-free analog audio and digital control circuits
- * Programming based on real-time operating system



➤ **Elemental Analyzer (Quantometer) Based on Aluminium and Iron**

◆ Ara Kavosh Pajouh Co.

www.arapajouh.ir



Product Introduction:

One of the important factors in selecting the type and quality of a metal part for different applications in the metallurgical industry is determining the amount of constituent compounds of that metal part. Quantometer is a device that measures the presence of different elements in a metal sample. For example, by analyzing an aluminum (or steel) piece, it is possible to determine the percentage of purity of the piece and the presence of other metal elements such as silicon, iron, copper, magnesium, nickel, zinc, etc. in it. Using the quantometer, one can analyze the quality of this piece as well.

Founded:
2014

Application:

Analyzing different aluminum alloys, alloy steels, types of cast iron in various industries such as casting and molding industries, copper industry, etc.

This product is final B2B equipment.

Technical Specifications:

Discharge frequency	Maximum discharge current	Fuse	Electrical connection	weight
200-400 Hz	150 A	16 A	230 V, 50/60 Hz	2 kg

Advantages:

- ✧ The ability to make an optical system
- ✧ Ability to create Spark
- ✧ Having a special calibration

International Standards or Permissions:

ASTM1251



➤ Metal Parts Inspection and Crack Detection System

Based on EMI

🏠 Dez Electronic Jonoob Co.

www.dezelectronic.com



Product Introduction:

In special alloy industries such as metal pipe production companies and rolling mills and among the users of metal pipes such as oil and gas well drilling companies, one of the most important factors in the use of pipes is the detection of stresses and damages and the absence of cracks in them. In rolling mills, for analyzing the condition of the pipes of its and in drilling companies to analyze stresses and cracks, there are some methods used for examination and analysis. One of these methods is the magnetic inspection and test system (MI), which is based on this equipment technology called EMI.

Founded:

2005

Application:

Inspecting and detecting the cracks in metal parts in rolling mills, production of metal pipes and drilling companies

This product is final B2B equipment.

Technical Specifications:

Processing speed	Navigation speed	Number of input channels	Magnetic coil
168 MHz	Up to 1 meter per second	8	11 inches

Advantages:

- * Manufacturing technology of high precision magnetic sensor
- * Techniques to increase the magnetic field without increasing the weight of the coil
- * Detecting signals with very low amplitude and specific shape
- * Creating software algorithms for automatic system calibration
- * Intelligent design of mechanical components to increase accuracy and speed

International Standards or Permissions:

Drill Stem Inspection(DS-1)



➤ Deep Well Inspection Camera

♣ Ideh Kavan Sanat Pardis Co.

www.idehkavan-tech.com



Product Introduction:

The deep well inspection camera is responsible for the inspection and videometry of deep water wells. Of course, according to special cases, this product can be completely customized. More general type of this product which is used more than other similar products has two cameras, one of which takes 360-degree asymptotic imaging and the other takes a fixed and vertical image. The optical elements of this system in accordance with the standards of in-well lighting and imaging are designed in such a way that no defects are observed in the image.

Founded:

2012

Application:

Inspection and videometry of deep wells in refineries, water & wastewater, dam construction, etc.

This product is final B2B equipment.

Technical Specifications:

Asymptotic camera	Degree of sealing	Inspection capability
360 degree rotation	IP68	to a depth of 400 meters



➤ Downhole Data Logger

🏠 Nar Co.

www.nar-co.net



Product Introduction:

In order to measure the changes of the water level in the underground water, data loggers are used in the well.

Founded:
2012

Application:

Measuring, recording, and sending the level of underground water in study wells

This product is final B2B equipment.

Technical Specifications:

network	Functional power	Measuring accuracy
GPRS and GSM-based mobile network	2 years	5 mm with a maximum interval of 15 meters of water level changes

Advantages:

- * Designing the analog and digital parts of the circuit
- * Design of waterproof sensor and circuit packaging
- * PCB (printed circuit board) design
- * Firmware programming
- * Webserver programming



➤ Downhole Measurement while Drilling (MWD)

with Drilling Orientation Sensor Modules, Power Controller, Gamma Ray and Lithium Battery Cartridge

◆ Pars Kav Co.

www.parskav.com



Product Introduction:

MWD (Measuring While Drilling system is used to measure important quantities of diagonal and horizontal wells during drilling operations. This system consists of two parts, inside-the-well section and outside-the-well part. Benefitting from advanced sensors, it measures the data inside the well, including the angle of the well alignment with the axis perpendicular to the ground and the alignment of the well with the magnetic north of the earth. Then, through creating the pulse or beat on the path of the drilling fluid, it is transferred to the surface of the earth and provide it to the drilling engineers so that by controlling the drill, they can reach the oil and gas reservoirs according to the pre-planned plan. By adding other advanced subsystems to this system, which are specifically used to measure the geological quantities of the earth's layers, the development of the LWD (Logging While Drilling) charting product is fulfilled. Simply put, an MWD system is part of a broader LWD system.

Founded:

2007

Application:

Drilling and extinguishing fire in oil and gas wells and residential areas

This product is final B2B equipment.

Technical Specifications:

Memory capacity	Memory frequency	strike	battery
240 hrs	Every 16 seconds	1000g 0.5 ms 0.5 sine	lithium

Advantages:

- * Having multiple processing systems such as CPLD and microcontrollers
- * Ability to work in harsh environmental conditions (temperature, continuous vibration and shock)
- * High accuracy in output and long operation
- * Using electronic power reduction techniques



Application:

Identifying faults, water leaks, underground holes and identifying the type of soil in civil and agricultural discussions

●> **Geophysical Monitor of Mineral Anomalies**

🏠 Baztab Erteash Maha Co.

This product is final B2B equipment.

Product Introduction:

The geophysical monitor of mineral anomalies is used for exploration in structures with different geology and at different depths and it is done by sending low frequency electromagnetic waves and receiving and analyzing them. Both transmitter and receiver parts are battery powered and man-portable. Data collection time and accuracy using this device is much better than similar devices.

Technical Specifications:

frequency	Voltage applied to the transmitter antenna	Battery life	Battery voltage
500 Hz to 24 kHz	20 volt pulse	7 hrs	16.8 volts

Advantages:

- * The ability to carry to mountainous places and collect data in difficult conditions
- * Ability to send signals in the range of 500 Hz to 24 kHz
- * The ability to match with similar electromagnetic devices

Founded:
2019



➤ Mobile Data Terminal (MDT)

◆ Sare Shomal Engineering Co.

www.sare-eng.com



Product Introduction:

The train's mobile data terminal (MDT) has the ability to communicate with radio network wireless, to send and receive two-way messages, display geographic location, make calls and record conversations. Conversation information, including voice, call time, date, caller number, etc. is stored on the SD memory card. In addition to audio information, locational information and moving speed are also stored on the SD card within the range of GPS coverage. The device also has the ability to announce coverage and lack of GPS coverage. If the GPS information is valid, the device clock will be set with the GPS clock.

Founded:

Application:

Establishing Communication with wireless radio networks to send and receive two-way messages in public transport vehicles, taxis, rail fleets, military logistics, etc.

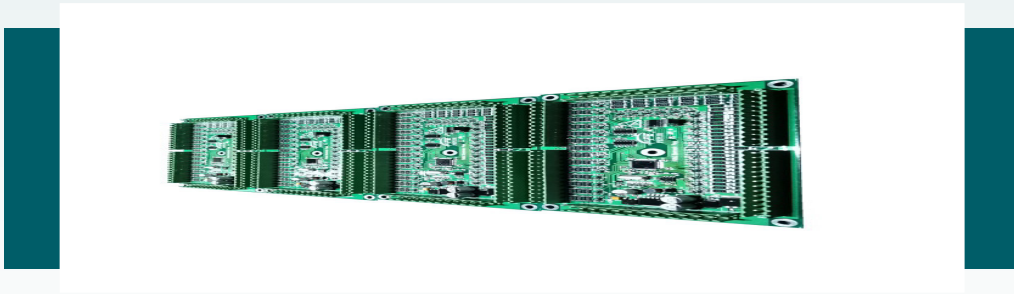
This product is final B2B equipment.

Technical Specifications:

battery	Device dimensions	power	memory	display
3V	185 × 110 × 55 mm	13.8V DC	2GB SD	7' color LCD

Advantages:

- * Programming technology with ARM processor
- * Practical implementation technology of MAP27 protocol for wireless communication
- * Technology of recording and separating the characteristics of recorded conversations along with conversations
- * Multilayer pcb design technology



DER Board and Its Services (Repairs)

Faraz Electronics Poya Isatis Co.

www.farazelectronic.com



Product Introduction:

The DER board is a data acquisition processor card that is installed on the Shovel TEREX RH120. In each shovel, 3 of these cards are installed. This card receives the information of analog and digital inputs and then arranges the data according to the algorithm and sends it onto the CAN bus. The card can be addressed using the address inputs. Each address is a sign of a special card. Shovel Terex includes two engines and hydraulic pumps. The card with address 1 is used to measure the values related to the engine and hydraulic pump on the right, and the card with address 2 is used to measure the values related to the engine and hydraulic pump on the left. The card with address 3 is also used to measure the values of the grease pump and shovel greasing.

Founded:

2018

Application:

Measuring parameters of coolant temperature, coolant volume, engine temperature, engine oil pressure, engine oil volume, etc. in different industries

This product is final B2B equipment.

Technical Specifications:

Analog input	Power consumption	Operating voltage
4 -20 mA	8 W	24 V

Advantages:

- * Micro programming
- * Circuit and hardware design



➤ PCM (Pulse Code Modulation) Multiplexer

◆ Fatech Electronics Co.

www.fatechelectronic.com



Product Introduction:

The PCM device is a multipurpose (multiplex) audio and data access system in different dimensions of 1U, 3U, 6U, which can transmit audio channels on optical fiber, E1, ETH, HDSL, and STM1 platform. The main task of this device is to convert different types of audio and data to all the mentioned platforms. Audio protocols that can be converted into PCM include two-wire interfaces such as FXO, FXS, HOT, MAG and six-wire interfaces such as WE&M4 and RADIO. Data protocols that can be converted into PCM include RS232 synchronous and asynchronous, Ethernet.

Main Export Destinations:

China

Export History:

Up to 500,000 \$

Founded:

2004

Application:

Converting analog lines to digital and sending voice and data between two independent centers on E1 platform; HDSL, Fiber, Ethernet; under standard protocols in different sizes and capacities for private and government centers such as telecommunications, ports, oil and gas industry, defense industries, etc.

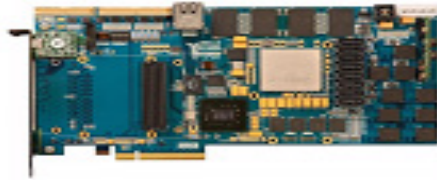
This product is final B2B equipment.

Technical Specifications:

structure	service	Average life span	Power supply	display
Modular and very flexible	Analog, Eth	15 years	AC 220 DC-4	LED

Advantages:

- * Redundancy support
- * Using high-power modules in the power supply with the ability to cut off the circuit in case of an increase or decrease in voltage
- * Coding technology on E1 interfaces
- * Using powerful modules to eliminate echo on all E1 slots in the form of Frame and Ethernet.



➤ FPGA-based Processing Card

◆ Novin Pardis Processing Technology Co.

www.pardistech.com



Product Introduction:

The FPGA-based processing card is a hardware card that has the ability to implement coding on the IDE provided by the company. This card uses a programmable FPGA chip, whose digital circuit is designed by hardware design experts using tools such as VHDL. This processing card provides the implementation of various advanced and high-speed systems without the need for manufacturing IC.

Founded:
2005

Application:

Digital processes in various technological fields such as advanced telecommunication systems, network security systems, and image and sound processing systems.

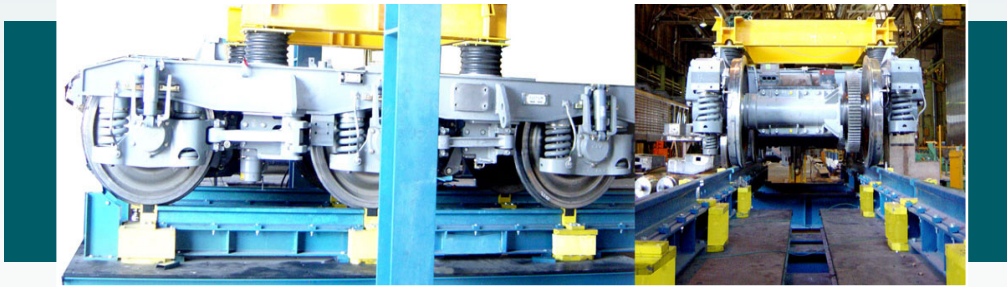
This product is final B2B equipment.

Technical Specifications:

Measured output of PCIe	SD RAM Configuration	Logical cells	Operating System (OS)
More than 500 MB/s (4X) More than 900 MB/s (8X)	Two independent 32-bit banks	14720	Windows, Linux, (32/64 bit), windows server

Advantages:

- * Processing card based on powerful FPGA chips with the exclusive design of the Multi-Layer board of Pardis company
- * Dedicated VHDL-based software-hardware cores of Pardis company for high-speed communication through PCI, PCIe and Ethernet ports.
- * Special design of analog and RF plug-in of Pardis company to connect processing card to industrial systems
- * Pardis company's exclusive software for the server connected to the processing card



➤ Flat Wheel Drive Detection System

◆ Towzin Electronic Co.

www.towzin.com



Product Introduction:

Weighing system during rail movement is one of the safety and security products to prevent train derailment. Flat wheel drive detection system, as an independent product, will have the ability to implement and prevent this major complication. One of the most common reasons for train derailment is train cut or flattened wheels, and this causes heavy losses in rail transportation every year. Thanks to this product, during the movement of the train, it is possible to detect and replace defective and flattened or cut wheels by accurately determining the position and number of wheels, bogies, axles and cabins by warning systems. Therefore, major complications can be prevented with the help of this product.

Main Export Destinations:

Oman, Azerbaijan, Iraq, Afghanistan

Export History:

50,000,000 - 100,000,000 \$

Founded:

1991

Application:

Detecting overload and asymmetric load on each wheel, wagon and bogie in transportation industry

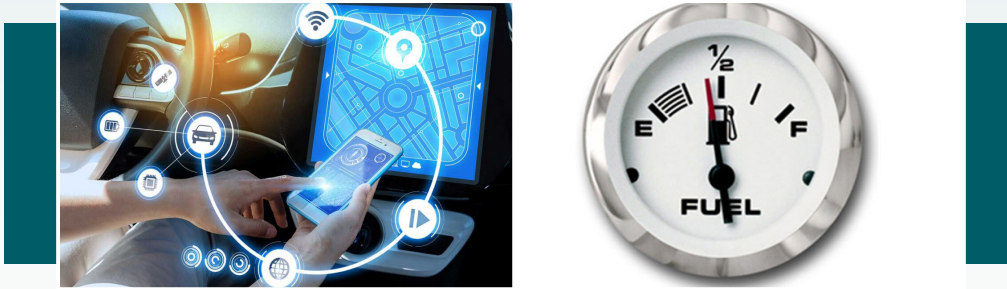
This product is final B2B equipment.

Technical Specifications:

Maximum weighing speed	Minimum weighing speed	The capacity of each cell load	Number of load cells	System protection degree
180 k/h	3 k/h	50 tons	12	IP67

Advantages:

- * Using MS SQL SERVER, C#, C++, ALTIUM for designing and developing system.
- * Using appropriate equipment such as isolation circuits and OP-AMP, computing circuits and hardware watch-dog based on FPGA and family microcontroller respectively.



➤ Automatic Fuel Tank Measuring Device for Freight Trucks and Related Services

◆ Fanavari Bartar Abzar Daghigh Co.

www.fanavari-bartar.com



Product Introduction:

Due to the spread of the despicable phenomenon of fuel smuggling at the border points, Fanavari-ye Bartar Company has manufactured fuel tank measuring devices in order to monitor and accurately record the fuel tank information of freight trucks. This device is portable and by placing the device's sensor probe inside the tank, it the sensor embedded in the head of probe detects the tank floor and calculates the fuel, and after confirming the correctness of the information, all information are sent to the servers oil company and Fuel Smuggling Fighting Organization through the Internet or intranet.

Founded:

2012

Application:

Measuring tanks in freight trucks

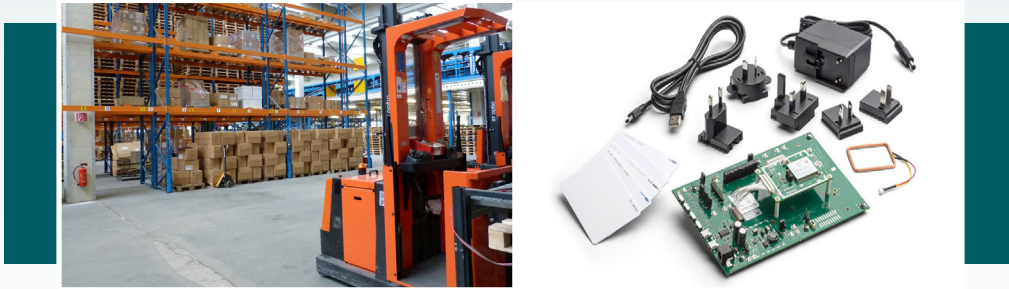
This product is final B2B equipment.

Technical Specifications:

repeatability	accuracy	weight
0.1%	0.15% full scale	1100 gr

Advantages:

- * Sending information to the oil company's server through WIFI and GSM modules on the internet and intranet platform to monitor fuel exports at border points.
- * High accuracy measurement
- * Ability to connect to portable bluetooth printers
- * Measuring three types of tanks in cars
- * Fully automatic measurement process



➤ **RFID-based Diagnostic Tool and FLLogger of Forklift Driving**
Based on User Recognition (Forklift Data Logger)

◆ Yekta Fan Design & Eng Co.

www.yektafan.com



Product Introduction:

RFID-based human identification Forklift data logger (FLLogger) is a device that is installed on vehicles, including industrial transportation machines such as forklifts, tow trucks, etc. This system recognizes the user via RFID and allows the car use if the user is authorized. Also, every occurrence, including occurrence that reduce the life of the machine or dangers that may occur during the use of the machine, is recorded in the memory and by sound alarms and relay output that can be connected to any warning device such as a hazard light, can inform the operator. Due to the use of Bluetooth 5.2, this system is able to advertise all the necessary quantities at any time. It is worth mentioning that the information of all the machines that are near the relevant official is available live on his phone or tablet.

Founded:

1999

Application:

Examining the driving condition in industrial transport machines

This product is final B2B equipment.

Technical Specifications:

Acceleration sensor	card reader	software	Central board
ADXL345	RFID	Android	in-house design with ARM Cortex M4

Advantages:

- ✦ Reducing the cost of maintenance and repairs of machines
- ✦ Increasing the productivity and efficiency of machines
- ✦ Reducing life risks and increasing safety in work environments
- ✦ Reducing the costs of transport machines idle time



Application:

Smart fire alarm in offices, organizations, commercial and residential buildings

➤ **Addressable Fire Alarm Control System**

🏠 Sens Co.

www.se-ns.com



Product Introduction:

The addressable fire alarm system refers to a set of electronic equipment that not only announces the fire, but also determines the exact location of its occurrence. Thus, the addressable fire alarm system, due to its special features, is more suitable for large projects, high-traffic and high-risk places, as well as very large and crowded residential buildings. The addressable control center is the central core of an intelligent fire alarm system and performs the processing and decision making on the information sent by the connected elements.

Main Export Destinations:

Turkey

Export History:

up to 500,000 \$

Founded:

2009

This product is final B2B equipment.

Technical Specifications:

Micro processor	dimensions	voltage	display
32 bit	120 × 41 × 410 mm	220 V	4.8' Capacitive touch screen

International Standards or Permissions:

- * EN54-2
- * EN54-4
- * EMC



➤ Modular Hardware of Fire Alarm and Fire-Extinguishing Systems

♣ Azar Liopad Co.

www.alpad.ir



Product Introduction:

Today, one of the most common causes of fire in buildings is linked to electrical and wiring systems; Therefore, commercial and home fire protection is of utmost importance and must be taken into serious consideration. ACTONEX control panel can be used for fire detection. First, the fire is detected by the sensors and equipment installed in buildings or industrial plants and then, the processing by the central core of the panel is done which results in appropriate reaction to it, such as activating fire alarms, activating extinguishing systems, etc.

Founded:
2016

Application:

Fire detection and appropriate response to it in large industrial spaces such as petrochemicals, refineries, power plants

This product is final B2B equipment.

Technical Specifications:

ARM core	Digital output card	Operating temperature	Operating Voltage
Cortex M4 with a speed of 180 MHz	16 channels – 500 mA 4 channels – 2 A	0-50 °C	12 to 24 V dc

Advantages:

- ※ Having the line monitoring capability
- ※ Having HotSwap feature

International Standards or Permissions:

- ※ EN54-2
- ※ EN54-4
- ※ EN54-13



Application:

Fire detection and appropriate response to it in large industrial spaces such as petrochemicals, refineries, power plants

➤ **RTU Industrial Automation Control Device**

◆ Anil Sanat Pishro Co.

www.anilcloud.com



Product Introduction:

Today, one of the most common causes of fire in buildings is linked to electrical and wiring systems; Therefore, commercial and home fire protection is of utmost importance and must be taken into serious consideration. ACTONEX control panel can be used for fire detection. First, the fire is detected by the sensors and equipment installed in buildings or industrial plants and then, the processing by the central core of the panel is done which results in appropriate reaction to it, such as activating fire alarms, activating extinguishing systems, etc.

Founded:
2013

This product is final B2B equipment.

Technical Specifications:

ARM core	Digital output card	Operating temperature	Operating Voltage
Cortex M4 with a speed of 180 MHz	16 channels – 500 mA 4 channels – 2 A	0-50 °C	12 to 24 V dc

Advantages:

- * Having the line monitoring capability
- * Having HotSwap feature

International Standards or Permissions:

- * IEC 60870-5-104
- * MODBUSTCP



Application:

Receiving online parameters and information related to the pressure of transmission lines or reservoirs in oil and petrochemical industry, water & wastewater company, power plants, dams, refineries and automation and telemetry projects, etc.

➤ **Smart Water Pressure Data Logger Equipped with GSM_GPRS**

🏠 Anil Sanat Pishro Co.

www.anilcloud.com



Product Introduction:

Smart water pressure data logger equipped with GSM_GPRS, has the ability to intelligently measure information related to the pressure of transmission lines and tanks. It can also store this information using internal stability and send it via SMS and internet network on mobile phones and server using SIM cards of domestic and foreign operators.

Founded:
2013

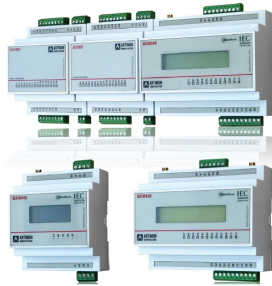
This product is final B2B equipment.

Technical Specifications:

Serial port	memory	Output current	Pressure sensor
RS485 modbus	internal	4 – 20 mA	0 - 3 bar

Advantages:

- ※ Using a special remote control rather than a keyboard to set the device and programming the device without the need to touch or open the device.
- ※ Powerful internal GSM antenna, designed in-house and specific to the characteristics and needs of the equipment
- ※ Special 4-20 mA output, remotely programmable and controllable



Application:

Receiving data and information online in weather stations, oil and petrochemical industry, water and wastewater company, transportation industry, etc.

➤ **Data Logger and RTU Intelligent Reading Equipment**

◆ Anil Sanat Pishro Co.

www.anilcloud.com



Product Introduction:

Smart data logger and RTU is a product that enables communication with instrumentation equipment using analog and digital inputs. It also has the ability to store all the information using internal stability and send this information through SMS and internet network on all mobile phones and servers using SIM cards of domestic and foreign operators.

Founded:

2013

This product is final B2B equipment.

Technical Specifications:

Serial port	display	Output power	Power supply
RS485 modbus	LCD	4 – 20 mA	9 – 15 V DC, 1 W

Advantages:

- ✧ Powerful internal GSM antenna, designed in-house and specific to the characteristics and needs of the equipment.
- ✧ Special 4-20 mA output, remotely programmable and controllable.
- ✧ Special domestic date and time calculation system by calculating Iranian leap years and seasonal changes of time
- ✧ The protocol for sending information is completely special and designed in the company itself, which can send the information in an aggregated way.
- ✧ Having Modbus RTU and IEC104 data transmission protocols and the ability to send data on the APN platform



➤ TS-R8861WLB - RTU

◆ Teska Sanat Arad Co.

www.teskasanat.com



Product Introduction:

RTU is an advanced remote control installed in posts and stations, which collects all the necessary information and parameters from different parts and after processing, sends it to the control center through telecommunication systems. In addition, the commands sent from the control center to the stations are transferred to the desired point after classification. In addition to ease of operation, this device reduces energy consumption, human errors, equipment depreciation, etc.

Founded:

2016

Application:

Collecting information and remote control in steel industries, refineries, power plants, automation of cement factories, etc.

This product is final B2B equipment.

Technical Specifications:

Execution of operations	Data transmission format	Memory card	ports
PID	GSM GPRS EDGE	Up tp 8GB	RS485 RS232

Advantages:

- * Setting up the mode bus protocol exclusively and without using ready-made and error-filled libraries
- * 4-20 milliamps industrial current analog output
- * Real-time activity of the product and having a low error rate
- * Setting up the network and wireless section
- * High expandability and various communication possibilities with products of other brands

International Standards or Permissions:

- * Modbus RTU
- * DNP3
- * IEC 870-5-104
- * IEC 870-5-101
- * ICE61131
- * IP40



➤ Modular RTU (Remote Terminal Unit)

◆ Kavan Tech Co.

www.ernyka.com



Product Introduction:

Remote Terminal Unit (RTU) is a remote control unit that is installed in power, water & wastewater, oil, and gas sites based on the need for a remote control unit. This product collects local data and transmits it to the dispatching center, and also receives and executes control commands from the dispatching center.

Founded:

2014

Application:

Collecting information and remote control in the field of electricity distribution, water & wastewater company, oil and gas industry, airports, etc.

This product is final B2B equipment.

Technical Specifications:

Ports:

- * Serial (RS-232)
- * Network (Ethernet)

Advantages:

- * Designing hardware and multi-layer boards according to international standards for proper performance in hazardous conditions.
- * Preparing source code and implementing communication protocols of SCADA systems
- * Configure the product hardware during installation and operation (inspired by much better implemented foreign similar products)

International Standards or Permissions:

- * DNP3
- * IEC60870



Application:

Collecting substations' data, storing and sending it in the automation of power substations, well water pumping stations, water treatment plants, solar power plants, etc.

➤ RTU

🏠 Nikan key Co.

Product Introduction:

The RTU device is a part of the automation system of electricity distribution substations, which is devised to collect substations' data, store, and send them to the dispatching center for monitoring purposes. Controlling some functions such as disconnecting and connecting the sectioner is also one of its tasks. It is worth mentioning that these controls are performed under the command of the center.

Founded:
2017

This product is final B2B equipment.

Technical Specifications:

power	display	software	dimensions	Operating temperature
24V DC	Character LCD 20 × 4	Configuration	13 × 19 × 31 cm	-25 to +70 °C

Advantages:

- * Programming with ARM processors
- * High security for data transfer
- * Protection against sudden voltage changes
- * Isolation between power supply and communication with the device

International Standards or Permissions:

- * DNP3
- * Modbus RTU



Application:

- * Intelligent lighting control system
- * Intelligent security control system
- * Intelligent control of heating and ventilating, and air conditioning system
- * Intelligent control of electrical equipment

➤ **Home Automation (Smart Home Control System)**

◆ **TABA Electronic Co.**

www.tabaelectronic.com



Product Introduction:

The smart building system, which is also known as Home Automation, refers to a set of hardware and software that are installed in buildings for the purpose of integrated monitoring and control of important and vital sections. By using the intelligent building management system (IBMS), the efficiency of the building facilities can be increased, its operation process could be optimized, and the service level can be improved by employing the technologies and advancements of the day.

Main Export Destinations:

Kuwait

Export History:

up to 500,000 \$

Founded:

1983

This product is final B2B equipment.

Technical Specifications:

AC input	Frequency	Motherboard operating voltage	GSM conection	Operating humidity
110~260V/AC	50/60Hz	14.5~16.5V	Quad-band 850/900/1800/1900MHz	≤70%RH

Advantages:

- * Mastering the implementation of the IOT platform
- * Linux-based programming for ARM microcontrollers with the approach of optimal use of memory space and high performance speed in information processing
- * Displaying 8 images simultaneously on one screen
- * The presence of electronic, mechanical, sheet metal and plastic injection units together in Taba Electronics



➤ Intelligent Building Management System (BMS)

◆ Intelligent Control & Processing Co.

www.icp.co.ir



Product Introduction:

Nowadays, the smartification of facilities in the construction industry is very important. This technology, which is known as the building management system, controls, monitors, and examines the technical system of the building such as the lighting system, cooling and heating, air conditioning, fire alarm and so on. Through the web and computer network, the building management system connects the functions of every single building equipment together to act as an integrated system and can be accessible from anywhere in the world. Therefore, smart home technology is used to supervise or control industrial processes to manage the facilities of an industrial or commercial building.

Founded:

2006

Application:

Collecting and processing facility information of industrial buildings such as clean rooms, database centers, electronic industries, commercial and office buildings such as hotels, airports and shopping centers.

This product is final B2B equipment.

Technical Specifications:

- * **software:** VBA language

Advantages:

- * Cost-effective compared to similar products



► Buildings Smartification System

Including 24-Channel KNX Switch Modules and Audio Controller System

◆ Ajirak Smart Bilding Management Co.

www.ajirak-bms.com



Product Introduction:

In the building's smart air system, there is no centralized brain and each device functions independently. The mini server can receive and process network information and then, based on defined needs and programmed intelligence, have a distinctive function to reduce energy consumption and increase the comfort of residents. In fact, this mini server plays the role of the centralized brain of the building's intelligent systems.

24-channel KNX switch modules: Switch actuators are among the most widely used tools in smart building systems. The role of this device is to receive information from the building's KNX network and disconnect or connect a relay, which usually most of the building's devices such as lighting branches, pumps, ventilation fans, etc. can be programmed by these relays. This switch is produced from Schneider's 24-channel actuator switch using the reverse engineering method.

Audio controller system: In smart homes, the audio system is one of the systems used to increase comfort. Audio systems in the intelligent part of the building are considered one of the most expensive systems, and we rarely see such systems in buildings. Our company has filled the empty space of the mentioned system in the intelligent building systems by making an audio system that can be connected via Bluetooth and has a reasonable price and excellent quality. Moreover, because of the company's capabilities, it is possible to provide the control process of this system, such as increasing and decreasing the volume, changing the audio file, changing the audio source using the intelligent building network i.e. KNX, so that they become adaptable to the use of all the tools available in smart buildings.

Founded:

Application:

- ✦ Providing audio and visual intelligent structures in administrative, educational, and industrial buildings
- ✦ Controlling two-mode on and off structures in heating systems, alarm system, lighting, etc. in the smart building system

This product is final B2B equipment.

Technical Specifications:

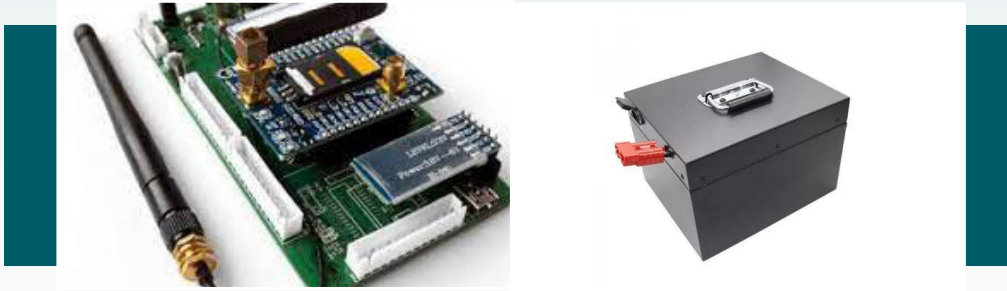
- ✦ **Wireless network:** wifi

Advantages:

- ✦ Hardware and software process management technology
- ✦ KNX protocol technology, to communicate with smart building devices produced by other companies.
- ✦ Multithreaded programming technology
- ✦ Automatic technology for detecting and fixing errors in the process of receiving data from sensors and controlling the system

International Standards or Permissions:

KNX



Application:

Supplying energy in cold stores, food industries, pharmaceutical industries, etc.

➤ Battery Management System (BMS)

◆ Lian Battery Co.

www.lithiumbattery.ir



Product Introduction:

Battery management system is a product that is designed modularly with high voltage and current. Its main task is to provide energy in various devices. The BMS includes lithium cells, waterproof shell, shock and vibration protection structure, insulation system, cooling and heating, battery protection board(s), power circuits and communication software. The subsets are managed independently or in connection with each other. During charging, discharging and storage, the functional parameters of the components are monitored and recorded instantly. Then, these parameters controlled by mechanical (cooling/heating) and electronic (switching, balance, etc.) systems. Due to the balance and design of switching and analog circuit, it is considered a world-class product in terms of efficiency, working cycle, environmental conditions and energy density. It is even a leading product in some practical solutions.

Founded:

2019

This product is final B2B equipment.

Technical Specifications:

- ※ **voltage:** Above 900 volts
- ※ **Body material:** aluminum
- ※ **Temperature:** -22 to +55

International Standards or Permissions:

- ※ IEC 62133
- ※ UL 22580
- ※ UN 38.3
- ※ UL(2271)
- ※ UL(25800)
- ※ UN38.3
- ※ UN3480
- ※ CE
- ※ OSHA



Application:

Collecting all the necessary information such as time and date, installation location, amount of consumption, discharge, etc. in agricultural and industrial wells for the purpose of constant examination and control of underground resources.

➤ **Smart Water Meter**

🏠 Espinas Co.

www.espinas-co.net



Product Introduction:

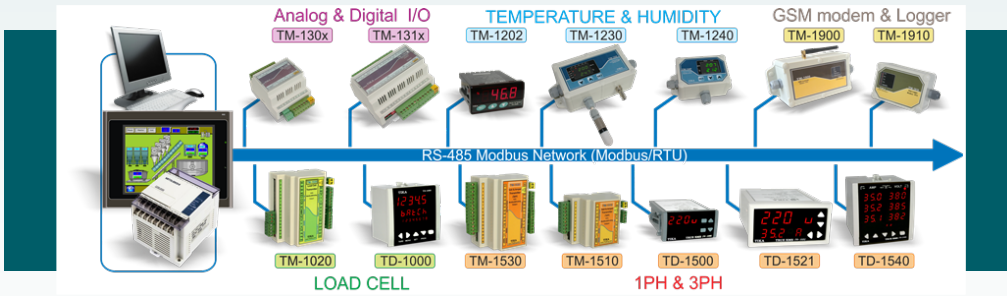
Meters are generally devices that are used for recording consumption information. The water meters also measure and record the amount of water passing through the pipe. The way the water meters function is that with the pressure of water flow, the turbine inside the meter rotates. For this purpose, turbines use blades that can be propellers or paddles. That is, with each rotation of the turbine, according to the size of the passage, one or more units are added to the amount of consumption. In regular and smart meters, the technique and method of counting, which is the turning of the turbine, is the same, however, they differ in the way they display consumption and calculations. In regular meters, the numbers are calculated and displayed by mechanical counters and the rotation of the gears and the coefficients of the number of cogs; nevertheless, in smart electronic meters, the numbers will be calculated by magnetic and ultrasonic sensors and other electronic counters and will be shown on the LCD screen.

Founded:
2016

This product is final B2B equipment.

Technical Specifications:

The accuracy of measuring the amount of water passing through	Degree of protection	display	AC input
Less than 2%	IP68	3' graphic LCD	220 V



Application:

Intelligent control of the heating and cooling system of office and residential buildings

➤ **Intelligent Boiler Room and Cooling System Controller**

◆ Tika Eng Co.

www.tikaeng.ir



Product Introduction:

The intelligent control system of the engine room is a system through which the equipment inside the engine room is used according to the thermal needs inside the building. Identifying this need is done by the intelligent system through the sensors installed in the engine room and outside the building and according to the environmental conditions. In addition to reducing the fuel consumption of the engine room, it causes the amount of depreciation of the equipment is reduced and the thermal comfort inside the building is adjusted to its standard level. Smartening the engine room is a process in which the control of burners and pumps leads to optimal energy consumption. Cooling system intelligent control is another product of this company, which in terms of hardware is similar to engine room intelligent controller and only their software is different. The intelligent cooling controller is used for the cooling system of the building and can command compressors, chillers, condensers and other cooling equipment, while the intelligent engine room controller commands burners, circulator pumps and hot water pumps.

Founded:

2010

This product is final B2B equipment.

Technical Specifications:

communication protocol	The number of outputs	Input voltage range	The number of inputs	power
ModBus-RTU	8	8~30v DC	4	220v AC-50~60 Hz

Advantages:

- * Using a type of dedicated small operating system known as RTOS
- * Using ICs with new technology
- * Using very accurate converters with minimum error and according to the definitions of each product
- * Using software calibration methods to eliminate device measurement error

International Standards or Permissions:

- * IEC 60770-3
- * IEC 60770-1



Application:

Integrated and intelligent control of equipment and machinery in large industrial buildings, oil and gas industries, petrochemicals, military industries, atomic energy and related industries, etc.

➤ **Intelligent Programmable Boiler Controller**

🏠 Mechatronic Parse Energy Co.

www.parseenergy.com



Product Introduction:

The intelligent programmable boiler controller is a product that is designed, produced and used as hardware and software equipment for the integrated and intelligent control of the equipment in a building or factory. This product aims to reduce fuel, energy and water consumption, reduce environmental pollutants, increase productivity, safety, and well-being. By using artificial intelligence (AI), it controls and monitors buildings or factories through a central control room. This product announces all failures, estimates the probability of equipment failure, and like an expert, can help the user in the repair and maintenance of the entire system.

Founded:
2016

This product is final B2B equipment.

Technical Specifications:

Temperature sensor	Pressure sensor	Programming
PT100	Transmitter WIKA	wincc TIA-pro

Advantages:

- ※ Predicting and announcing the expected failure time based on the expected risk and an automatic PM
- ※ Applying forecasting and decision-making algorithms in the time interval of two long feedbacks

International Standards or Permissions:

- ※ NFPA72
- ※ NFPA85
- ※ NFPA86
- ※ IEC 61511
- ※ FM7650
- ※ API556
- ※ EN 50156-1
- ※ ISA-TR4.00.05



Smart Board

◆ Danesh Avaran Co.

www.daneshavaran.com



Product Introduction:

The smart board is a touch board with standard educational dimension. Using the infrared method, it has a touch-sensitive screen (passing the cross-section close to the screen) which can display the computer screen or any other similar device on the board and similar to any other touch screen, transfer the user's information to the processor and display the appropriate action on the screen at the appropriate speed. This device can be used for educational applications or seminar presentations, etc. The way the device functions is that the environment of the operating system used is displayed on the board using a data projector, and the user can act on the board by touching any part of the screen.

Founded:

1986

Application:

Presenting educational materials in schools, universities, conference halls, conference rooms and companies and startups.

This product is final B2B equipment.

Technical Specifications:

net weight of smart board	touch delay time	Touch screen resolution and accuracy	writing tracking speed	Screen type
18 kg	Maximum 4 milliseconds	32768 × 32768	400 points per second	Matte with 4 layers of anti-scratch, waterproof, and anti-acid paint

Advantages:

- * Designing matrix mandrel aluminum frame
- * Designing PCB circuit for touch circuits
- * Devising driver and bootloader
- * Custom color for the page



➤ **Tiara Biometric Time & Attendance Device, Facial Recognition, Fingerprint, Card and Touch Screen**

◆ Paliz Afzar Co.

www.palizafzar.com



Product Introduction:

Face recognition has been widely used in identifying criminals, credit cards, security systems and many other cases, and due to its many applications, it has received attention in recent years. Therefore, Tiara Time & Attendance machine is one of the most up-to-date devices in the world with unique facilities in this field. By using the most advanced processor and creating a safe environment for data storage, this device is suitable for use in large and small organizations.

Founded:

1996

Application:

- ✧ Attendance through face recognition, fingerprint, card in centers and organizations
- ✧ Identification of animals in laboratories, wildlife parks, animal husbandry and veterinary medicine

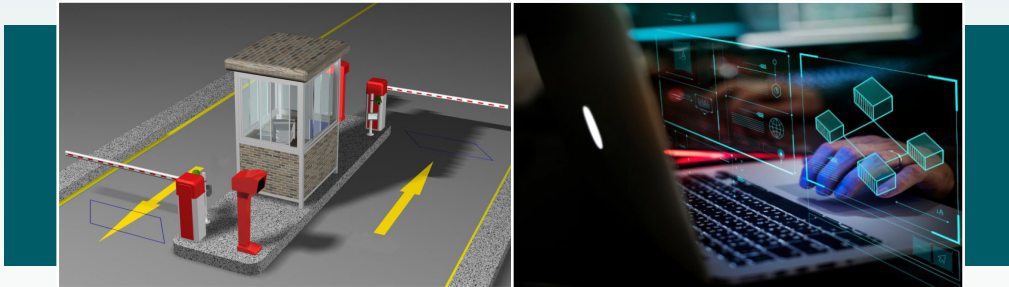
This product is final B2B equipment.

Technical Specifications:

camera	Power supply	dimensions	weight	display
3 megapixel	12V adapter-2A and 2500 mAh battery	40 × 120 × 198 mm	700 gr	5.0" graphic touchscreen 450x800

Advantages:

- ✧ Creating a secure environment for data storage and hardware control
- ✧ Linux and Android operating systems written by the company itself (completely domesticated)
- ✧ Encrypting the storage space of files, programs and memory by the operating system
- ✧ Ability to recognize face, age, gender and predict a person's face in the future



Application:

Detecting and identifying the movement of people and cars in high-traffic environments

➤ **Comprehensive Security and Intelligent Monitoring Automation**

◆ Eyerik Intellogent Processing Co.

www.eyerik.com



Product Introduction:

Comprehensive security automation is a piece of software that consists of two parts: server and client. This automation can intelligently control the movement of all people and vehicles inside or outside the organization and, if necessary, by executing appropriate control commands and direct communication with all types of gates and roadblocks, it fulfils its security commands perfectly. In this monitoring system, first, the recorded images of CCTV cameras are collected by image management software. Then, the artificial intelligence algorithms that are available as pre-prepared libraries in the software code will be applied to each camera as an extension to the image. If the situation is set as a warning for the software, the system will intelligently recognize that situation and if the same situation is observed again, all tasks of that warning will be executed automatically. Among the functions, this type of system is able to detect and identify the movement of people and cars in the scope of the camera, identify and track people in the scope of the camera, count the number of people and cars entering and leaving a place, detecting the unusual speed in the area, spotting the remaining objects and removed objects, detecting the duration of a person's presence, identifying the movement paths of people and cars in an environment and estimating the amount of bustle in the environment, just to name a few.

Founded:

2012

This product is final B2B equipment & service.

Technical Specifications:

board	speed	coding
EMBEDED DECODER	10 FPS	ENCODER

Advantages:

The high power and speed of the sample in recognizing people and objects



➤ Indoor Positioning System Using BLE Technology

🏠 Mobtaker Hamrah Jahan Negar Co.

Product Introduction:

The main product of this company is a basic location solution in indoor environments (commonly known as indoor location). In this solution, people, equipment and devices are connected to smart tags. This collection is called "fleet". With the help of an Internet of Things (IoT) location and communication infrastructure that will be installed in the environment, communication, location and monitoring capabilities will be established on the fleet. At the user level, location, monitoring, messaging and data analysis services can be provided to the user.

Founded:

2019

Application:

Providing location, monitoring, messaging and data analysis services for manufacturing industries, mining, and petrochemical industry, etc.

This product is final B2B equipment & service.

Technical Specifications:

- * **Internet port:** BLE
- * **Location nodes:** RTLS



➤ Continuous Monitor of Well Water Turbidity

◆ Ab Azma Instruments Co.

www.ab-azma.ir



Product Introduction:

The continuous water turbidity monitoring device is installed in the distribution lines and water supply network and like a laboratory without the need for an operator, it monitors the water quality twenty-four seven. In case of detection of water pollution, the entry of chemicals, or the collapse of wells, not only the device sends SMS alerts to relevant experts, but also intelligently turns off the water transfer pumps.

Founded:

2013

This product is final B2B equipment.

Technical Specifications:

Maximum pressure of inlet fluid flow	Measurement accuracy	Measurement resolution	Power consumption
0-2 bar	0.02 FS	0.01	18W

Advantages:

- * Ability to automatically control turning on and off the well pump
- * 4, 10, and 1 point calibration capability
- * Equipped with the exclusive technology of measuring three-dimensional absorption in three directions
- * Equipped with an intelligent noise corrector

International Standards or Permissions:

- * U.S. EPA method 180.1
- * ISO 7027



Application:

Controlling climate conditions in the environment of greenhouses

➤ **Greenhouse Control System**

🏠 Ide Bekr Mobin Co.

www.ibm.co.ir



Product Introduction:

Continuous control of greenhouses is one of the main concerns of its owners, which is easily possible with the help of new technologies. The greenhouse control system is a product designed to provide a comprehensive and innovative solution in the field of commercial greenhouse construction. A smart greenhouse is a self-regulating environment with a micro-controller of climate and environment for optimal plant growth. The climate conditions inside the greenhouse, such as temperature, humidity, lighting, and soil moisture, are continuously monitored by modern communication equipment and sensitive and powerful sensors.

Founded:

2010

This product is final B2B equipment & service.

Technical Specifications:

Environmental conditions	ROM	RAM	Display
-40~+85/ 5%~95%	8G (eMMC)	1GB DDR3	1280x800 LVDS (10.1 inch)

Advantages:

- ※ Customization of FS, kernel, u-boot
- ※ Ability to create control logic in a dynamic and simple way
- ※ Real time monitor and control
- ※ Circuit design with high reliability and low power consumption



➤ Intelligent Surface Sorting Device

◆ Farabin Co.

www.farabinco.com



Product Introduction:

The process of sorting products that have surfaces (such as wood, leather, stone, and metal factories) often done by the human eye. Due to the large variety in the design and color of the products, the continuation of this process during the working hours causes eye fatigue and failure to correctly identify the product grade, which is normal. In some of these categories of products, including construction stone, there is a lot of diversity and the great similarity of the products makes it practically impossible for humans to categorize them accurately. On the other hand, since the categories are not integrated, the products that were already sold, will be returned, which in turn, causes the customer and the factory owner both suffer a great loss. Therefore, the need for a device that performs sorting automatically has been raised by industries including the stone industry.

Founded:

2019

Application:

Sorting different products based on surface characteristics, including color, texture, porosity, structure, etc., in tile and ceramic, wood and metal factories, etc.

This product is final B2B equipment.

Technical Specifications:

- * **Device weight:** 6 m
- * **Device length:** ≈ 4 tons

Advantages:

- * Machine vision AI-based Technology
- * Lack of similar foreign products



Application:

Establishing radio and telephone communications in the control tower of civilian airports, military airports, marine control tower (oil-commercial docks), mobile flight control center, etc.

➤ **Airport Control Tower Switching System**

◆ Aseman Tajhiz Co.



Product Introduction:

The switching system of the airport control tower is installed in the control tower of the airports. All radio communications (transmitters and receivers) and telephone communications are provided to the flight controller through this system. The air traffic control (ATC) operator can select the desired connection through the touch interface installed on the console table in front of him and talk to the flight crew (pilot) through the handset or headset connected to this system. This system is the most basic requirement of a flight control tower, which, in addition to the electronic systems in the control tower, has a series of central equipment in the control center section under the tower.

Founded:

2014

This product is final B2B equipment.

Technical Specifications:

Power supply	Control unit	Number of radio communications	Number of telephone connections	Number of operator interfaces
12 V DC	2	128	128	128

Advantages:

- * Identifying the transmitter and receiver interfaces of the aviation VHF band and designing a suitable interface for them.
- * Synchronizing communications on data buses
- * Launch audio CODEC with G729 compression algorithm
- * Isolation between boards inside the central system and external boards and lines to prevent noise and high voltage protection
- * Designing and building HMI (operator user interface)



► Crane Anti-Swing System Based on the Master Switch Function

◆ Azhman Sanat Co.

www.azhmansanat.com



Product Introduction:

In order to increase the efficiency of cargo transportation systems and achieve greater safety, it is necessary to minimize the fluctuation of cargo. The great significance of this issue is when sensitive loads such as melting pots (crucibles), metal coils, rails and, in general, very heavy loads are transported by crane. In this case, any fluctuation will cause irreparable damages in the industry. Therefore, in such situations, the crane carriage should be placed in the desired position in a short time and with high accuracy, while the load swing angle should have a small and acceptable amount. In addition, the role of the operator (manipulating the lever or master switch) should be minimized in creating the lever. This product solves the problem by using a new method based on Model Identification, accurate calculation of PID coefficients, the effects of load shape and its inertia, as a side tool along with the drive motors of all types of cranes and load carriers.

Founded:

2017

Application:

Increasing the efficiency of transportation and safety systems in all types of cranes, pulpits, etc.

This product is final B2B equipment.

Technical Specifications:

- * **Operating Temperature:** -20 - +60 °C
- * **Weight:** 0.5 - 1.0 kg

Advantages:

- * Applying Nonlinear Model Identification in functional modeling of the crane and calculation of drive parameters in reducing the load bearing
- * Accurate estimation based on measurement results and comparison with the real state



monitoring the signal lights in the railway industry. The main task of this board is to provide the signal based on the operator's commands and ensure the accuracy of the signal operation.

➤ Railway Interlocking System

◆ Noavaran Payesh Co.

www.noavaranpayesh.com



Product Introduction:

Railway Interlocking System: The comprehensive computer-software interlocking system ensures the safe control and monitoring of train traffic in stations and along railway tracks. The safety and reliability of the system are considered to be the most important features of the system. Through interface circuits and embedded drives, this system is connected to each equipment installed on the side of the rail, and while monitoring their status, it applies the commands sent by the system operator.

Interlocking simulator system (station simulator): This system is developed to simulate the behavior of station equipment and to test the interlocking system. This system has the ability to perform all functional tests of the interlocking system in a station environment. Simulating the behavior of switch machine, road circuit, and signals is one of the characteristics of this system.

Switch machine control board: The main task of switch machine control board is controlling the switch machine and monitoring its condition. This board is one of the most sensitive boards used in the interlocking system in the railway industry. In addition to monitoring the location of the switch, monitoring whether it is locked or not, whether it is normal, reverse, or middle is also the responsibility of this board.

Track control board: This board in railway lines divides the rail into sections with a certain length and isolates each of these sections physically by rubber insulation or electrically from the adjacent parts. To each of these parts, equipment is connected that forms a road circuit and includes transmitter, receiver, power supply and relay.

Signal control board: The signal light control board is responsible for controlling and

Application:

- * **Railway interlocking system:** Controlling train traffic in railway stations and networks, and controlling train movement in heavy factories with railway lines
- * Interlocking simulator system: Testing subway, railway, tram and depot interlocking systems
- * **Switch machine control board:** Controlling switch machine
- * **Track circuit control boards:** Monitoring track circuit in the railway company and urban train systems and etc.
- * **Signal control board:** Preventing the interference in train traffic, sending speed control commands and determining the direction of movement in divergent connections/testing interlocking systems

Founded:

2017

This product is final B2B equipment.

Technical Specifications:

Railway interlocking system	
monitoring and control capability	Response time
minimum 100 needles	Maximum 1 second
Switch machine control board	
operating temperature conditions	
10 to +60 °C	
Road circuit control boards and signal control board	
Board length	operating temperature conditions
280 mm	10 to +40 °C

Advantages:

Railway interlocking system:

- * The technology of manufacturing and testing the control boards of the functions next to the railway lines
- * Interlocking logic programming technology

Interlocking simulator system:

- * The technology of manufacturing and testing the control boards of the functions next to the railway lines
- * Interlocking logic programming technology
- * Interlocking system black-box test technology
- * Interlocking simulator development technology in stations

Switch machine control board:

- * Hot Plug-in
- * Having EMI filters

International Standards or Permissions:

Railway interlocking system:

- * EN50126
- * EN 50128
- * EN 50128
- * EN 50125

Control boards:

- * EN 50128
- * EN50125
- * EN50121
- * EN50126
- * PC2221
- * ECSS





➤ Smart Optimized LED Traffic Lights

◆ Rasa Mehr Co.

www.rasamehr.ir



Product Introduction:

One of the important parameters of a smart city, considering the importance of managing electric energy consumption, especially during peak hours of consumption (at night), is the intelligent street lighting system of the city, which can be effective up to 70% in reducing electric energy consumption in the lighting sector of the city. Therefore, this company has succeeded in producing LED lights for passages and public spaces of the smart city with unique features. These lights are produced in two types with nano coating and without nano coating.

Founded:

2016

Application:

Lighting of roads, highways, public space and...

This product is final B2B equipment.

Technical Specifications:

light distribution angle	Luminous flux	Optical efficiency	power	Type of lamp
140 degrees	15000L	150L/W	100W	LED COB-SMD

Advantages:

- * Nano coating on the LED lens
- * The technology of developing solutions based on advanced image processing
- * Integrated circuit design and manufacturing technology
- * Design and manufacturing technology of industrial electronic boards with EMC considerations
- * Reaching a power density of one kilowatt per centimeter

International Standards or Permissions:

- * IEC 61000-3-2 EMC
- * IEC 61000-3-2 IP66



Application:

Inserting production date, expiration date, price, production series, logo, standard logo, serial, etc. in production lines

➤ P2128 - Industrial Inkjet Printer

♣ Subar Science and Technology (MATSA JET) Co.

www.matsajet.ir



Product Introduction:

Inkjet printers entered the market in the mid-1980s. Since then, inkjet printers along with the advancement of technology has been developed and changed. Depending on the type of function, inkjet printers are divided into two types: domestic and industrial. P2128 industrial inkjet printer is a product that has been used in various industries to insert information such as production date, price, logo, etc. The industrial printer (jet printer) is classified in the category of inkjet printers with DOD technology.

Main Export Destinations:

Emirates

Export History:

up to 500,000 \$

Founded:

2015

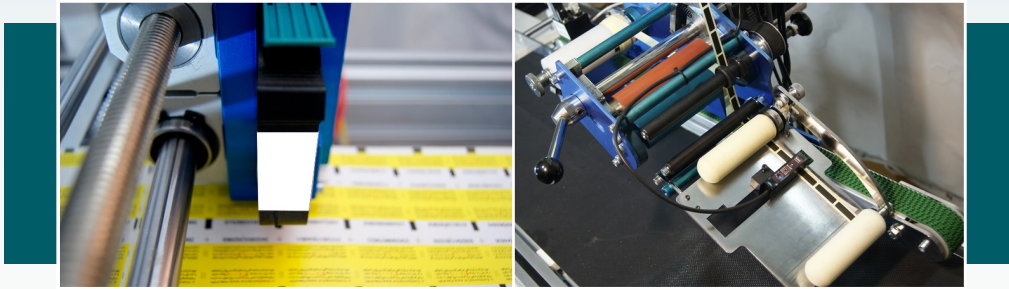
This product is final B2B equipment.

Technical Specifications:

Maximum print speed	LCD	Resolution	Body Material
30 m/min	128 × 64 pixel	160 DPI	All steel

Advantages:

- ※ Hardware programming technology
- ※ Assembly language programming technology for high operation speed
- ※ Parallel operation of two microcontrollers
- ※ Microcontroller 8051 programming technology



Application:

Printing authenticity labels of health-oriented products, serial and password printing on all types of charge cards and printing in the production line

➤ **Industrial Inkjet Printer**

◆ Ideh Pardazan Nazer Aval Co.



Product Introduction:

The industrial inkjet printer as the name suggests is of the inkjet type, which has the ability to print quickly and accurately on all kinds of products. In addition, it has the ability to print various types of variable and fixed information such as text, serial, password, bar code, two-dimensional bar code, QR-Code and DataMatrix on different surfaces such as paper, cardboard, PVC, etc. The high speed of this product makes it suitable for use at the end of production lines to print products' serial numbers, production date, etc.

Founded:

2015

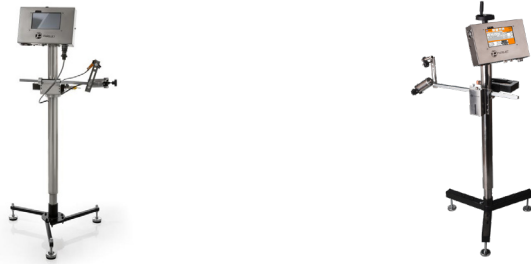
This product is final B2B equipment.

Technical Specifications:

print width	Print speed
0.5' (1.27 mm)	1 m/s and accuracy of 300dpi 0.5 m/s and accuracy of 600 dpi

Advantages:

- * Using fast ARM-based microcontrollers to manage a large volume of variable information in a short time
- * Storing and sending large amounts of data without any interruption in printing at maximum speed
- * Designing a very fast differential connection (40Mbps) for safe transmission (removing common noise) of data between microcontrollers.
- * High frequency double layer board design (40MHz) with narrow tracks (6 mm inches)



Application:

Carrying out the printing process in the field of food, medicine, packaging, machine building, pipe making, stone and construction industries, etc.

➤ **3rd Gen Printers Including Turbo x3, Express V3, and Shuttle M3**

🏠 Pars Jet Co.

www.parsjet.com



Product Introduction:

ParsJet jet printer of Shuttle model M3 and Express model V3 is designed and produced using piezo electric printing technology. High-quality materials are used to manufacture this jet printer and the device is made completely industrially. The body and column of this device are all-steel and the column's height can be adjusted.

Founded:

2011

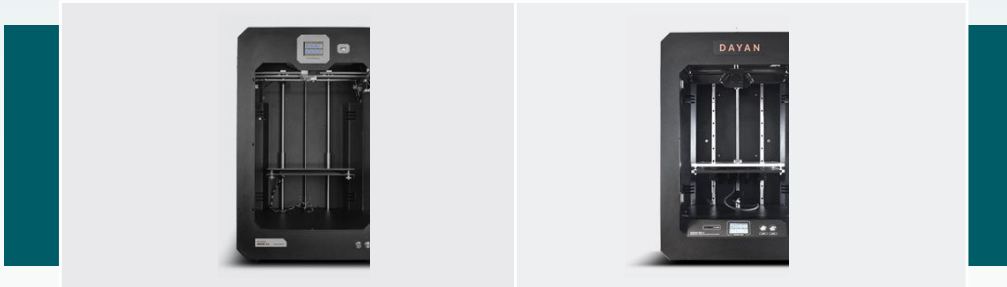
This product is final B2B equipment.

Technical Specifications:

Operating voltage	Power consumption	Permanent memory	CPU	display
100-240 VAC	10 W	1-2Gbit	ARM Cortex-M4	7' and 10'

Advantages:

- * Setting up SDRAM and NAND Flash memory with a shared port connected to the processor while maintaining the speed of 100Mhz
- * High processing speed and updating files for printing online
- * Running Fat32 on NAND Flash memory using external SDRAM memory
- * Special PCB design for high-speed ports between semiconductor components such as SDRAM, NAND, and LCD



➤ DLP 3D printer (Radiance G-6000)

🏠 Borna Noavaran Pouya Co.

www.borna3d.com



Product Introduction:

DLP 3D printer is a type of 3D printer whose consumables are UV light-sensitive resin, and liquid. The way the device works is that first, the resin tank is filled with light-sensitive resin and then the build plate enters the resin tank and a very thin layer of resin is placed between the build plate and the bottom of the resin tank. Then, the UV light is shone on the build plate and turns the liquid into a solid, and this process continues until the last layer of the model and finally the 3D model is created. The dimensional accuracy of the device is very high, around 50 microns and they are used only in places where high accuracy is required. It is worth mentioning that the complete solidification of the 3D printed model is done outside the device using a UV box. The cost of using these devices is very high compared to FDM devices, due to the high price of the device's consumables and for this reason; it is only used in some special industries.

Founded:

2015

Application:

Printing special industrial parts and used in dentistry and jewelry making

This product is final B2B equipment.

Technical Specifications:

Body Material	Maximum power consumption	Maximum current consumption	Device voltage	Z axis movement accuracy
Iron sheet	8000 W	3.63 amps	220-240V AC	5μm

Advantages:

- * Full metal body
- * Designing precise and anti-bubble build plate
- * Lifelong resin tank
- * Ability to print different materials



Application:

Sealing binding documents and papers in organizations, administrative and commercial institutions, universities, etc.

➤ **Safe Doc Device with Online Communication Capability**

◆ Kara 2000 Co.

www.kara2000.ir



Product Introduction:

The safe DOC device is used to protect documents and information using a Biometric sensor; This device has the following features:

- * Secure data sharing
- * Protection of organizational or family photos and documents
- * Ability to customize memory
- * Impossibility of usable copy of information (due to encryption) in the +safe DOC model
- * It is not possible to define an expiration date to access files in the safe DOC+ model
- * Portal with easy portability

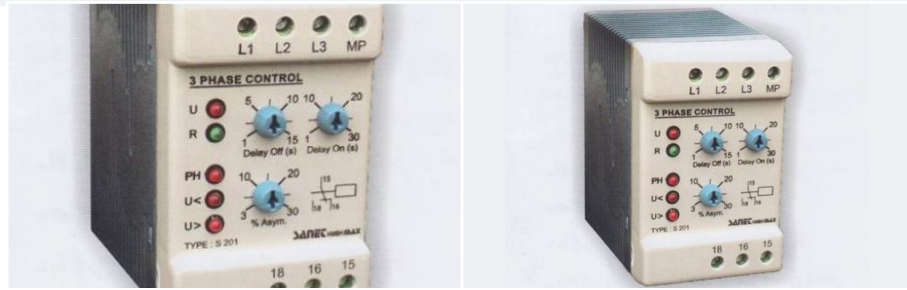
Founded:

2003

This product is final B2B equipment.

Technical Specifications:

Motor Drive	Microcontroller	Motor	Material	Display
H bridge	AVR ATMEGA8	Regular DC armature	metal sheet and plexiglass	4.3 inch colored touch screen



Application:

Controlling and monitoring electrical equipment in data centers, server rooms, switchboards and telephone centers, etc.

➤ **SMART PDU**

🏠 Borna Electronics Co.

www.ebte.ir



Product Introduction:

Using PDUs seems to be essential and inevitable to manage the power consumption capacity of network equipment due to the increase of servers and the number of network equipment in data centers and server rooms. PDU is a type of power module that works in a network. The network capability of PDU makes it possible to inspect and control each of the outputs of this device through the network or the Internet. This device which has one input and multiple power outputs is often used inside a rack to power servers and network equipment. When it comes to the management of data center physical space allocation, precise calculations must be done.

Founded:
2008

This product is final B2B equipment.

Technical Specifications:

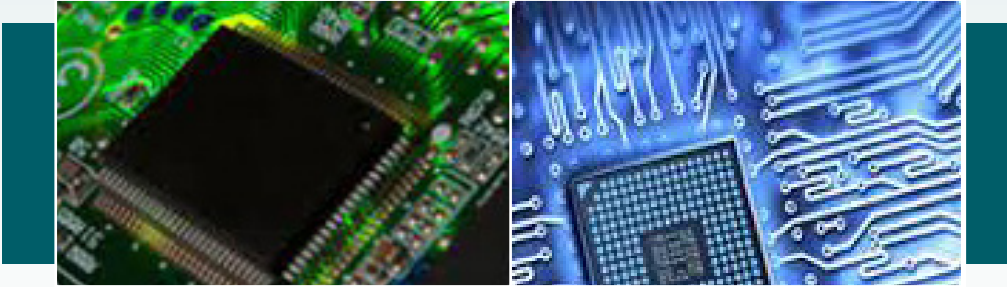
Input voltage	Protocol	Operating temperature
85 – 260 Vac	SNMP,HTTP, Modbus TCP/IP	-20 to +80 °C

Advantages:

- ✦ Programming technology with ARM cort processors
- ✦ Eliminating electromagnetic radiation to pass the necessary standards
- ✦ Hardware programming technology
- ✦ Ability to store information in PDU for one year

International Standards or Permissions:

- ✦ EMI
- ✦ EMC



► Bayan Server Electronic Control Board

Bayan Co.

www.bayan.co.ir



Product Introduction:

Bayan "Kara" servers are the result of diligent studies and efforts of Bayan company specialists, which are designed and produced based on the requirements and conditions of customers and in accordance with world standards. Bayan server is designed with a capacity dependent on the number and type of hard drives used. Bayan server has a controller board which includes the main processor and its task includes collecting information from different parts, processing, storing and displaying them. In addition, in case of emergency, a backup battery is provided which enters the circuit as soon as the power is cut off. As a result, control board continues to monitor temperature and humidity and store information.

Founded:

2007

Application:

Bayan servers are used in public and private organizations, large companies, small and medium businesses, public and private data centers of companies.

This product is final B2B equipment & service.

Technical Specifications:

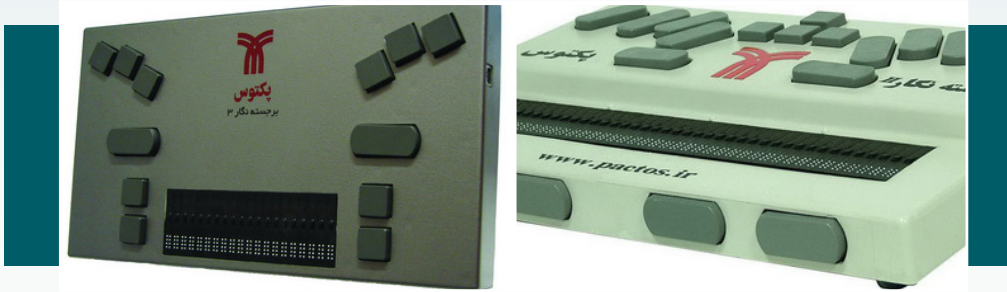
- * **cover:** electrostatic
- * **Power:** 2 units

Advantages:

- * Having all the characteristics of similar foreign products
- * Dedicated configuration according to customer needs
- * Reasonable cost
- * Temperature tolerance up to 45°C without disrupting server performance

International Standards or Permissions:

- * TPC-C
- * Phoronix Test Suite



➤ Computer, Cellphone, and Tablet User Interface for the Visually Impaired

◆ Pactos Inc Co.

www.pactos.ir



Product Introduction:

The smart companion Barjasteneqar is a portable device with the ability to function independently. With Braille and audio outputs, Barjasteneqar is considered the best rehabilitation aid for Persian-speaking visually impaired people. This product, with its hardware and software features, fulfills the study and writing needs of the visually impaired users. In addition, with the possibility of connecting to an Android smartphone or tablet, while providing Braille output for them, it also provides the access to internet with Braille output. The software collection of this device includes Persian and English vocabulary software, phone book, audio file playback, calculator, and Quran software with Persian and English translations.

Founded:

1991

Application:

For the visually impaired's educational use, employment and free time

This product is final B2B equipment.

Technical Specifications:

Product tangible attributes	CPU	RAM	Power	Braille screen display
Weight: ~675 gr Dimensions: 25 × 14.3 × 3.5	Quad core	DDR2	3.7 V 2-cell battery	piezoelectric cell

Advantages:

- * Offering a chance to read books, articles and all kinds of text files with audio and Braille output
- * Editing and creating all kinds of text files with Braille keyboard peculiar to the visually impaired
- * Providing connection to a computer and using it as a braille display/keyboard
- * Providing conditions for job creation and job promotion for visually impaired employees, teachers and professors
- * Giving access to the internet and computer games such as chess for the visually impaired



➤ Banking services System for the Visually Impaired in branches Barjastenegar 2 and 4 with user interface software

◆ Pactos Inc Co.

www.pactos.ir



Product Introduction:

This system includes Barjastenegar 2 and bank forms software. This device known as Barjastenegar is equipped with a braille keyboard and display, and the bank forms can be completed by the visually impaired using the keyboard. All the text in the bank forms can be read by the visually impaired through the braille display of the Barjastenegar by touch. The banking forms software is not installed on the cashier's computer and Persian audio output is active on all parts of the banking forms. Visually impaired customers, using a special system and without the need to be accompanied, can fill out the various banking forms such as account opening forms, withdrawal forms, deposit form, card services, etc., using voice inputs and outputs, and braille. Then, the completed forms are printed by the cashier's printer and given to the cashier to carry out operations.

Founded:

1991

Application:

To facilitate the use of banking services for visually impaired people

This product is final B2B equipment.

Technical Specifications:

Weight	Braille screen display	Input Voltage	O/I ports
~ 545 gr	Piezoelectric cells	5 V	1 USB2 port 1 USB type B port

Advantages:

Similar to foreign products



➤ Avin Cash Register with Main Modules of Avin Financial Software

◆ Avin Smart Business Co.

www.avin.ir



Product Introduction:

Avin software assists the sales process and store management in the easiest possible way. Avin’s Power Shop hardware with a stylish and compact appearance, creates a beautiful view in the store and the place where Avin software is implemented.

Founded:

Application:

- ※ Managing the sales process in supermarkets, cafes, restaurants

This product is final B2B equipment.

Technical Specifications:

Monitor	Number of ports	CPU	Memory
15.6" Full HD	4	Powerful quad-cores with RK3288 @ 1.8 GHz	2GB of RAM, 16GB of internal storage

Advantages:

- ※ Eliminating telecommunications and modem noises from the input signal
- ※ Managing timers to optimize the heating time of the printer head
- ※ Creating a special bootloader for remote hardware programming



➤ Driving Simulators of Light and Heavy Vehicles (Buses, Trucks and Dump Trucks) and Motorcycles

◆ Nasir Driving Simulator Co.

www.drivingsimulator.ir



Product Introduction:

Sedan driving simulators: Car simulators, thanks to the virtual reality (VR) technology, expose the user to a simulated environment, so that they get the feeling of being in the real environment. Therefore, the feeling of presence is created by the user's interaction with the environment and immersing in that environment. By interaction, we mean the mutual relationship between the user and the environment, in such a way that both the user affects the environment and the environment can affect the user. In this case, although the user is in a virtual environment, their reactions to the environment will be natural and in accordance with what happens in reality.

Bus driving simulator: By creating a safe and low-risk environment, bus driving simulators provide a suitable environment for training and qualification of bus drivers.

Truck driving simulator: Today, with the technology advancement, it is possible to train and increase the skills of operators of heavy vehicles such as mining vehicles using virtual reality systems. Getting a special driver's license requires spending a lot of time and money and is usually not available to everyone. Special vehicle simulators provide users with the chance to see all kinds of training skills and risk awareness in workshops, mine pits and dangerous working spaces all in a virtual and safe manner.

Motorcycle driving simulator: Motorcycle is a common means of transportation in Iran, and many applicants attend the authorized driving schools every day

Founded:

to get the driver's license. According to the conditions, a motorcycle can be very dangerous for people with low skills or people who lack sufficient knowledge to control it. The design and construction of a motorcycle simulator has been planned for the training and qualification of motorcycle riders in order to reduce traffic accidents by increasing skills and qualifications of the users in a safe and low-risk environment.

Application:

Driving simulation in driving schools, transportation systems, etc.

This product is final B2B equipment & service.

Technical Specifications:

Sedan driving simulators		
Display resolution	Horizontal viewing angle	Image processing system
768 × 1024	60 degrees	At least 30fps
Truck driving simulator		
display	Horizontal viewing angle	
49'	80 degrees	

Advantages:

- * Simulating various environmental conditions such as weather, traffic, snow and ice, etc.
- * Multi-user capability of bus simulators such as Isuzu, etc.
- * 3D implementation of the graphic environment of the employer's mines based on the mine pit topography model in the truck driving simulator
- * Simulating environmental conditions such as collision and accident in the motorcycle simulator

Second Chapter

Instrumentation



2nd CHAPTER

First Chapter

Second Chapter

Third Chapter

Fourth Chapter

Fifth Chapter

Sixth Chapter

Instrumentation

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Precision Test Electronic Equipment

Sensors



Application:

Measuring the pressure of single-phase fluids in pressure tanks in oil and gas industries, petrochemicals, refineries, food production industries, etc.

➤ **Pressure Transmitter with Analog Output**

🏠 **Petroservice Parsian Kish Co.**

www.petroservicesco.com



Product Introduction:

A pressure transmitter is a tool that measures the amount of pressure in fluids. This transmitter has the ability to provide analog output. Based on the user's needs, the output of this transmitter will be in two forms, current and voltage. Due to its design, this transmitter has the ability to be placed in high-risk (explosive) conditions such as drilling rigs where there is a possibility of gas leakage. The calibration board provides the initial and re-calibration of the transmitter and software troubleshooting of the pressure transmitter in case of failure.

Founded:

2006

This product is final B2B equipment.

Technical Specifications:

Output current	Input voltage	uncertainty	Transmitter dimensions	Accuracy
4-20 mA _p	11-24 V	0.02 bar	10 × 3 × 3 cm	FS 0.05

Advantages:

- ✱ Manufacturing products with very low cost
- ✱ Achieving an FS error of 0.05%
- ✱ Ability to provide analog and current voltage output selectively
- ✱ Devising Transmitter board based on electrical protection standards
- ✱ Using chips with very low dimensions to reduce the size of the final product

International Standards or Permissions:

IE



➤ Ultrasonic Transducer

◆ Pejvak Rayan Co.

www.pejvakrayan.com



Product Introduction:

Today, the use of ultrasonic waves in various fields such as non-destructive testing of sensitive industrial parts, ultrasonic washing and cleaning, water and gas flow detection, industrial welding and machining, as well as the diagnosis of internal defects of the human body (sonography) and etc. is prevalent. In the field of material testing, ultrasonic testing of industrial products and parts is considered the most widely used non-destructive testing method, which is used to identify and diagnose surface and internal defects, determine the properties and thickness measurement of sensitive industrial parts and products without destroying them. In this test, ultrasonic waves in the range of 0.5 – 25 MHz are sent into the part under test, and after hitting the defects and discontinuities inside the part, they are reflected and returned. Then, the received waves are processed to identify possible defects and discontinuities. This method of identifying internal discontinuities is also known as industrial ultrasound. Meanwhile, ultrasonic probes, as the heart of ultrasonic testing devices and systems, are one of the most important components responsible for sending and receiving ultrasonic waves. Ultrasonic test probes have various types that are made according to the application and the frequency range used.

Founded:

2015

Application:

Identifying and diagnosing the surface and internal defects, determining the properties and thickness measurement of parts and products in medical industries and fields

This product is final B2B equipment.

Technical Specifications:

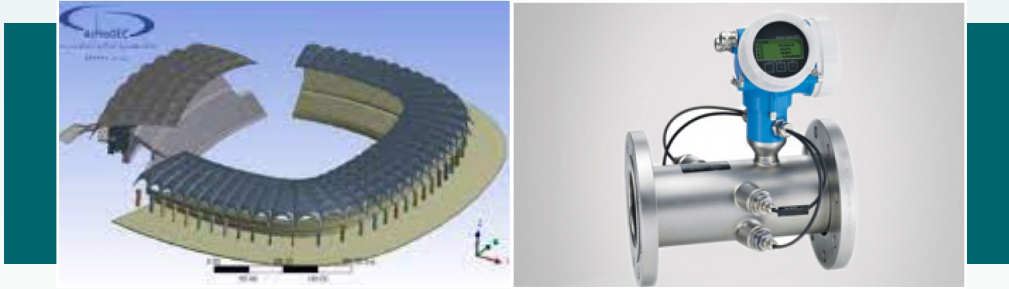
Operating temperature	Sensor frequency	Piezo crystal dimensions
-10 to +70 °C	0.1 – 10 MHz	4 – 40 mm

Advantages:

- * Design and manufacturing technology of noise suppression module in adjacent frequencies
- * The design and manufacturing technology of the matching circuit for the maximum power coupling of the sensor to the receiver
- * Designing and manufacturing technology of matching layer for maximum power coupling to the part under test
- * The technology of designing and manufacturing the sensor body based on the piezo type without limiting its signal power

International Standards or Permissions:

BS EN 12668



Application:

Measuring the amount of fluid flow in a pipe

➤ **Ultrasonic Transducers for Use in Flowmeters**

◆ Artiman's Process Development Engineering Co.

www.arprodec.ir



Product Introduction:

Ultrasonic flowmeter is a type of flowmeter that measures the speed of liquids. By using ultrasonic transducers, the flowmeter can measure the average velocity along the path of the emitted ultrasonic beam, by measuring the average time difference between the ultrasonic pulses emitted in the flow direction or by measuring the frequency change.

Founded:
2015

This product is final B2B equipment.

Technical Specifications:

- * **Body material:** Titanium
- * **Working frequency:** 200 KHz



Application:

Measuring very small resistances in the size of one microhm in electricity distribution companies, power plants, pipeline companies, telecommunications and switchboard manufacturers, etc.

➤ **Digital Micro Ohmmeter**

◆ Tapco (Tarashe Pardaze Pooya) Co.

www.tapco1.com



Product Introduction:

Any electrical conductor shows resistance to electric current. Various ohmmeters are used to measure electric currents. One of these ohmmeters is a digital microohmmeter. The digital microhm meter is capable of measuring the contact resistance (Contact Resistance Meter) and applying high current to both ends of the conductor and measuring its resistance in the range of microhm and milliohm in order to determine the quality of the conductor based on this information.

Founded:
1998

This product is final B2B equipment.

Technical Specifications:

Current flow	Consumption current	Maximum power consumption	Output Voltage	Measuring range
25A – 200A with accuracy of 1A	Maximum 5A	2KW	Maximum 5V DC	1μΩ-16mmΩ

Advantages:

Lower price compared to similar products



➤ 50 MHz Digital Oscilloscope with Memory

◆ International Rayan Nik Electronic Co.

www.rayannik.com



Product Introduction:

A syloscope is a measuring device that is used to observe waveforms and measure voltage, cycle time, phase difference, and observe the volt-amp characteristic curve of semiconductor elements such as diodes and transistors. Oscilloscope is an accurate voltmeter but it does not have the ability to measure the current directly. To measure the current, indirect methods such as Ohm's law must be used. This device due to the accurate display of the signal image and different components of the signal is considered the most important device in an electrical and electronic laboratory. Oscilloscopes, in general, fall into two categories: analog and digital. Due to the many capabilities and facilities of the digital type, RAYAN NIK Company has put this type of oscilloscopes on the design agenda.

Founded:

2016

Application:

- ✳ Examining and analyzing analog and digital signals in the laboratories of electrical engineering schools
- ✳ In research and development departments of industrial companies to design electronic circuits
- ✳ Quality control units to test and review standard signals
- ✳ Repair units to fix the defects of electronic boards
- ✳ Low frequency control systems that the analog oscilloscope is not able to show these signals.
- ✳ Connection with the curve plotting device and the characteristic curve display of semiconductor parts
- ✳ In general, in all scientific, medical, engineering, communication and military research and development centers.

This product is final B2B equipment.

Technical Specifications:

Bandwidth limitation	Input coupling	Power source	dimensions	display
20MHz (-3dB)	AC, DC, GND	AC 180V~240V, 50Hz ±10%	330 × 142 × 140 mm	LCD

Advantages:

- ✳ Having two parallel processors to perform processing and control tasks
- ✳ Spartan 6 series FPGA processor
- ✳ ARM microcontroller Cortex M3 series 7 of ST company
- ✳ Competable with global products such as: GWinstek, Hantekt, Rigol



Application:

Analyzing different materials, measuring the thickness of thin layers, determining the concentration of biological materials, etc. in pharmaceuticals, biology, geology, etc.

➤ **Micro Spectrophotometer**

◆ **TechNooran (Norfanavari Tech Parto Nooran) Co.**

www.technooran.com



Product Introduction:

Microspectrophotometer is a combination of microscopy and spectroscopy. Spectroscopy is a method to analyze different substances. The combination of spectroscopy and microscopy makes it possible to analyze substances with low concentrations point by point. It also provides substance analyzing in any solid, liquid and gas phase. This device is used for non-contact and non-destructive measurements of colorimetry and also for determining the thickness of thin layers. The ability of spectral mapping with high spatial resolution is one of the capabilities of this device. In this device, first, the point to be analyzed is accurately determined by imaging, inside the computer. Then, from the same point, absorption and transmission spectra are recorded.

Founded:

2019

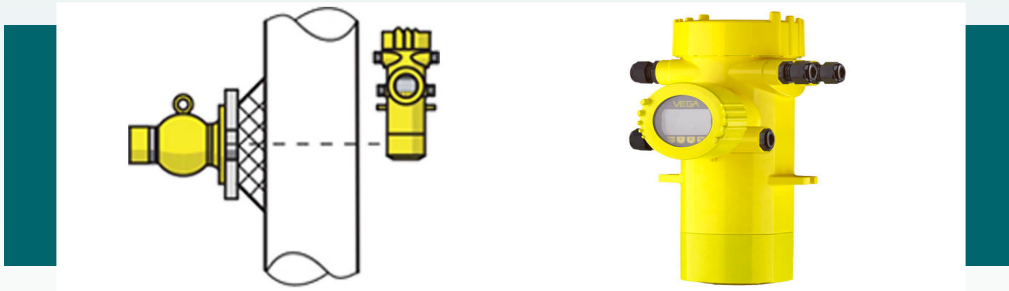
This product is final B2B equipment.

Technical Specifications:

Spectroscopy time	Microscopic eyepieces	Spectroscopy accuracy	Spectroscopy efficiency
2.5 ms -10s	10x	<2 nm	200-1200 nm

Advantages:

- * Increasing the dynamic range from the default 300 in the CCD datasheet to 450 with the third party Toshiba CCD datasheet.
- * Increasing snr from 45 to 60 dB
- * Creating cooling in CCD to reduce noises
- * Designing and implementing micro spectrophotometer software in Python environment and communicating with CCD using Kivy and pyqt.



Application:

Measuring the density of all types of currents in pipes without any contact with the contents of the pipes in the gas and petrochemical industries, oil industry, reclamation steel industry, wood industry, etc.

➤ **Gamma Densitometer**

◆ Abad Fanavar Sharif Co.

www.afsharif.ir



Product Introduction:

Gamma densitometer can measure the density of the substance in tanks and pipes online without any contact with the equipment. In many industrial systems, it is necessary to determine the density of the contents of the pipe at any moment. This product determines the density of the substance and provides it for the controller online in various automation formats. Although volumetric flow is used in many factories, it is not possible to determine the passing mass with it. However, by using gamma densitometer, it is possible to solve the problem of instantaneous mass measurement, especially in complex process conditions.

Founded:
2014

This product is final B2B equipment.

Technical Specifications:

Chamber Class	Count Rate Range	Operating Temperature
IP65	0 ... 99999 cps	-20 ... +50 °C

Advantages:

- * Ability to work in noisy and highly hazardous industrial environments
- * Adaptation technology to reduce radiation source based on half-life
- * Very high accuracy using advanced filtration and statistics systems
- * Real time activity

International Standards or Permissions:

- * IEC 62598: 2011
- * IP65



Application:

- * Monitoring of polluting gases in industries
- * Measurement of air pollution in cities
- * Detection of flammable and explosive gases
- * Detection of toxic and dangerous gases (such as hydrogen sulfide) and...

➤ **QS9000 TDLAS Laser-Based Gas Analyzer**

◆ **Quan Sens Co.**

www.quansens.com



Product Introduction:

Laser-based gas analyzer is a product that can measure the concentration of air pollutants and toxic and dangerous gases by a laser. As a new tool for identifying, monitoring and controlling polluting gases, these types of analyzers, which are known as TDL Gas Analyzers, have attracted the attention of various industries in developed countries. In these analyzers, diode lasers in the near-infrared wavelength region are used to measure the intended gas concentration. Asid from increasing the speed and accuracy of measurement, laser light performs measurements in a non-contact manner. Non-contact measurement means that pulloantns in the environment (which are sometimes corrosive or cover the sensor surface and therefore reduce sensor sensitivity) do not affect TDL analyzers.

Founded:

2017

This product is final B2B equipment.

Technical Specifications:

Gas pressure	Sampling method	Measuring range
0.3-3 bar	In Situ	0-90%

Advantages:

- * High-speed sampling by microcontroller (1-2MSPS)
- * Signal noise, signal background removal and information extraction by DSP techniques
- * Dual Pass technology

International Standards or Permissions:

- * ASTM D2223-84
- * ASTM D4084-82
- * ASTM D2420-86
- * ASTM-D1142-86
- * ASTM D3669-78



Application:

Determining surface parameters in mechanical, metallurgical, aircraft, automobile and steam turbine manufacturing industries

➤ **Optical 3D Nano Profilometer**

◆ Fath Optics (Fateh Noor Mihan) Co.

www.fathoptics.ir



Product Introduction:

Microscopes are good tools for observing and watching the surfaces of tiny products in nanometer dimensions, but common microscopes only produce two-dimensional images of the sample and are not capable of observing and determining the height of the tested samples. In general, nanoscale measurement tools are designed and built on the basis of electronics and optics. Optical 3D Nano Profiler is used as a precise measurement tool to determine the structure and quality of surfaces in research laboratories. This device has various applications in many different research fields, among which we can mention the fields of physics, chemistry, biological sciences, material science, nanotechnology, biotechnology and other similar fields. This device works in two modes of white light interference microscopy. In white light interference microscopy model, the ability of this device to collect data from samples of different types and geometric shapes is not limited, and no special preparation for the sample is required for data collection.

Founded:

2012

This product is final B2B equipment.

Technical Specifications:

camera	axial displacer sensor	Axial displacer	Operating system (OS)	Operating voltage
5 megapixel, monochrome	Capacitive / resistive	piezoelectric	Windows 7, 8, 10	220V/50 Hz

Advantages:

- * 3D determination of complications such as fractures, steps and sharp changes in height in the sample
- * Determining three-dimensional dynamics of samples
- * High data collection speed compared to other similar products
- * Determining the shape, waviness and roughness of the sample surface with nanometer accuracy
- * Ability to collect data from the sample in reflective mode even from samples with low reflectivity (4%)



Application:

High precision measurement in industries such as oil and gas, petrochemical, iron and steel, road construction and chemical, etc.

➤ **Gamma Ray-Based Fluid Profiler-Densitometer**

◆ Padra Mehr Arya Technical Engineering Co.

www.padratech.com



Product Introduction:

The Gamma hydrometer and densitometer is one of the instrumentation systems types that is used to continuously measure and control the level of materials including all types of liquids and solids inside the tanks, the density of the fluid passing through the pipe and point level measurement. In this system, the measurement of the desired parameter is non-contact without affecting the characteristics of the materials. High accuracy, non-destructive measurement, and the possibility of measuring in harsh conditions such as high temperature and pressure inside pipes and tanks, which other instrumentation equipment fail to measure, are among the features of radioactive measurement of density and surface.

Founded:
2017

This product is final B2B equipment.

Technical Specifications:

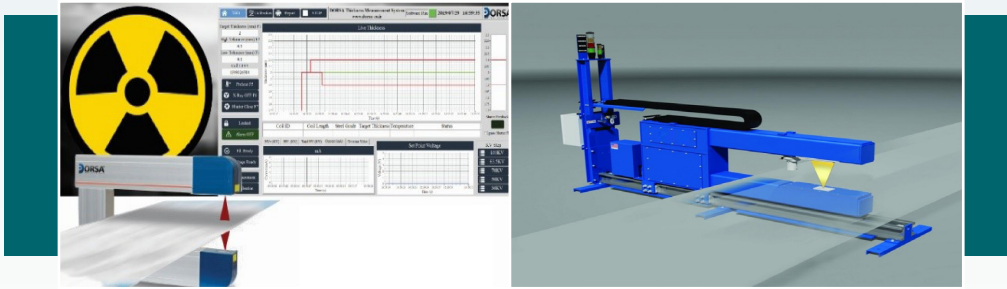
Material of the housing	cross-sectional area of the wire	Maximum cable length
Stainless steel	0.5 ...1.5 mm ²	3000 m (120 Ω)

Advantages:

- ✦ Stabilizing the count of radioactive rays
- ✦ Designing the energy window circuit to separate the energy of the incoming rays
- ✦ Compensating the effect of reducing the radioactive source activity
- ✦ Removal of disturbing rays in the measurement

International Standards or Permissions:

- ✦ IEC60529
- ✦ IEC60629



Application:

Measuring the thickness of metal sheets, paper, fabric, etc. in industries

➤ **Metal X-RAY Thickness Gauge**

◆ Dorsa Co.

www.dorsa-co.ir



Product Introduction:

The metal X-RAY thickness gauge is designed and built to measure the thickness of metal sheets, paper, fabric, etc. during the production of these products in the X-ray based production line. X-rays, after being produced, come out of the radiation source and after passing through the desired section, they hit the detector. Based on the amount of attenuation and absorbed radiation in the desired section, the thickness of the product is extracted based on the calibration charts. This device can be used in industrial environments where the product is continuously produced and its thickness must be recorded and monitored at any moment.

Founded:
2018

This product is final B2B equipment.

Technical Specifications:

Maximum product speed	Radiation voltage level	Output ray current	Sampling rate	Measurement accuracy
1200 m/m	70-100 and 160 KV	1 mA	1000 Hz	10 micrometers

Advantages:

- ✧ Generating voltage up to 160 kV and controlling this voltage
- ✧ Detecting X-ray in the detector
- ✧ Waterproof steel housings



➤ Visible Fourier Transform Spectrometer

◆ Ozhen Advanced Spectroscopy Equipment Co.

www.specinstruments.com



Product Introduction:

Fourier transform spectrometer systems known as spectrum analyzer systems in the world are one of the most advanced spectroscopic equipment capable of measuring spectral power in terms of wavelength. Fourier transform systems have the ability to analyze the spectrum and intensity of lasers, lamps, interference modes, and even measure single-mode lasers out of the cavity, and are employed as a widely used tool in various research fields. This product, unlike conventional optical systems that separate the wavelength of the incident radiation based on the scattering element, uses interferometric principles to separate the wavelength (separation of the frequency of the incident radiation) and has higher accuracy, a wider range of measured spectrum, It has a higher sensitivity and speed in responding to the scattering element samples.

Founded:

2017

Application:

- ※ Biological studies (disease diagnosis, protein analysis, etc.), agriculture and quality control of food products (agricultural product inspection and food analysis from production until consumption)
- ※ Environmental studies (qualitative and quantitative research of city air and pollutants in short and long distances, water quality inspection and analysis of toxic waste gases, detection of methane and carbon dioxide gases in the environment, etc.)
- ※ Detection and analysis of chemical substances and compounds (examination of organic substances, compounds, petroleum derivatives, industrial oils, polymers and all chemical compounds)

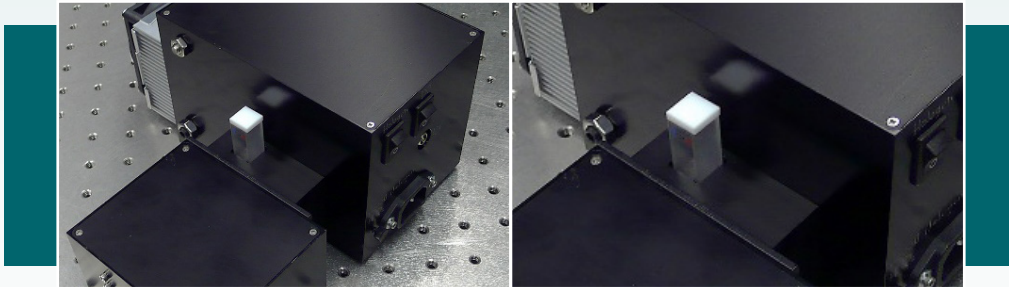
This product is final B2B equipment.

Technical Specifications:

- ※ **Optical fiber:** 400μm SAM
- ※ **Convex lens:** fused silica

Advantages:

Having an optical system



➤ UV-Visible-Infrared Field Spectrometer (UVIR3510)

◆ Noor Imen Tajhiz Co.

www.hyperspectralimaging.ir



Product Introduction:

Field spectrometer UVIR3510 is a reflection spectrometer in the spectral range of 350-1000 nm with a spectral accuracy of more than 2 nm. This product has a light source with a portable power source and is designed for field applications (outside the laboratory). By using this device, it is possible to check the reflection and transmission spectrum of the samples in the environment outside the laboratory. This product is designed only for use outside the laboratory and after each (battery) charge, it can be used continuously for 5 hours. The elements used in this system include spectrometer, optical fiber, light source, power source, charger and device charge level display.

Founded:

2018

Application:

Controlling food quality in the agricultural industry and analyzing material in the chemical and medical industry

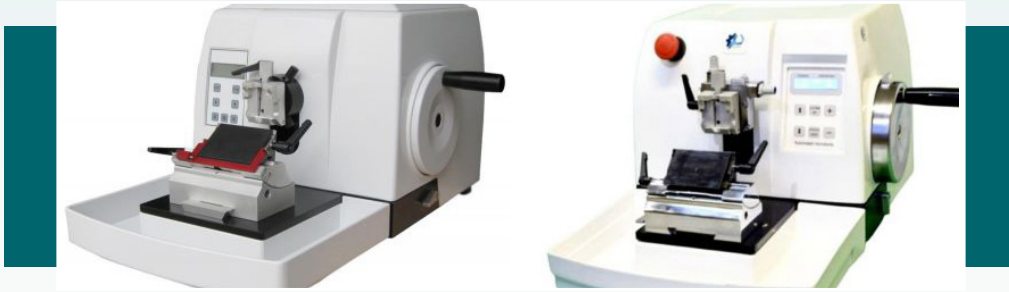
This product is final B2B equipment.

Technical Specifications:

input slit width	light source power	spectrometry time	spectral accuracy	Spectral efficiency
25µm	10W	100 ms	2 nm	350-1000 nm

Advantages:

- * Optical design
- * Accuracy in high resolution sample scanning
- * Specialized programming



➤ Automatic, Semi-Automatic, and Manual types of Microtome

◆ Pooya Ehrasz Co.

www.pe.co.ir



Product Introduction:

The microtome is designed in three types: automatic, semi-automatic and manual. This system which is automatically and manually used for micro cutting (micron cutting) of tissues sampled from the human body and processed in pathology laboratories. The system consists of tissue holding parts with the ability to adjust the angle, the blade holder which has the ability to adjust the angle, and advance mechanism with 1 micron accuracy. For cutting, there are two functioning modes: initial trimming and cutting mode. First, the sample is trimmed and then the texture is cut automatically or manually in micron steps.

Founded:

2017

Application:

Cutting of tissues sampled in pathology, hematology and food laboratories

This product is final B2B equipment.

Technical Specifications:

Life span	Frequency	Voltage
≥6000 hrs	50 Hz	220 V

Advantages:

- * Cutting tissue (of human/animal/plant) with 1 micron accuracy with continuous performance over 6000 hours
- * Defining Retraction mode for continuous and uniform tissue cutting



➤ Piezo Nano Positioner

◆ Fath optics (Fateh Noor Mihan) Co.

www.fathoptics.ir



Product Introduction:

In many research laboratories and also in some sections of the industry, it is important to apply very precise nanometer displacements. In applications such as microscopy, where nanometer precision, high scanning speed and fast step change are required, piezoelectric nano displacer is considered the best choice. By using a micron mechanical linear displacement device equipped with piezoelectric ceramic, knowledge-based Fath Optics Company has succeeded in manufacturing a piezoelectric nano displacer that with an accuracy of 4 nanometers is able to monitor a 30 micrometer range of motion. Also, by using a manual micron screw, 25 mm movement displacements can be produced separately with an accuracy of 10 micrometers.

Founded:

2012

Application:

- * Accurate sample displacement in all types of microscopes and industries
- * Used in interferometers and in creating controlled optical path difference in the optical laboratory

This product is final B2B equipment.

Technical Specifications:

Device weight	response time (in location mode)	components	dimensions	Sensor type
450 gr	100ms	Aluminum, steel	90 × 91 × 26 mm	Strain-Gauge

Advantages:

- * The technology of using two displacers (a piezoelectric nanometer displacer and a precision micron displacer) in order to increase accuracy and working range.
- * Manufacturing a location sensor to control the nanometer displacement of the electric piezo crystal
- * Manufacturing Open Loop and Closed Loop cycles in order to precisely control the position of the nanometer displacer.
- * Manufacturing piezoelectric crystal controller driver



➤ Profilometer (50 nm Accuracy)

◆ Nano Pajouhan Raga Co.

www.npraga.ir



Product Introduction:

Profilometer is an effective and practical device to access surface roughness and thickness information of nanometer and micrometer layers. Many surface smoothness standards in the world are based on contact profilometer. Nowadays, in all industries and sciences, knowing the depth and thickness of layers and surfaces is one of the most important phenomena. This device is used to measure the thickness of nanometer thin layers.

Founded:

2014

Application:

Measuring the thickness of the layer and the height of the surfaces in industries such as making electronic sensors, paint industries, solar cells, etc.

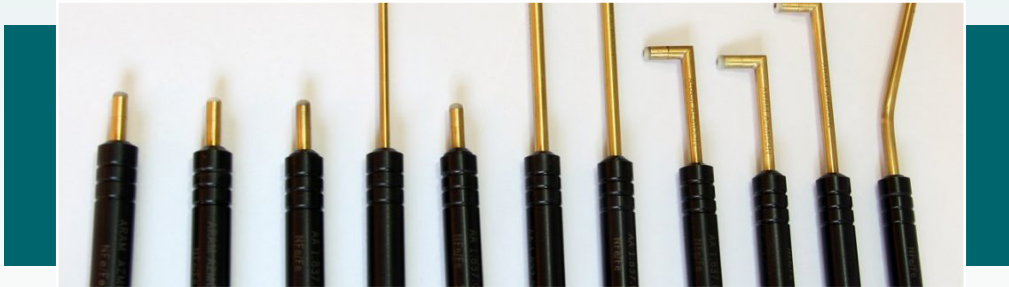
This product is final B2B equipment.

Technical Specifications:

Measuring mechanism	probe options	input power	pole sensor	force sensor
Needle profilometry	made of tungsten with a 5 μm tip and steel with a 20 μm tip	220V 50-60 Hz	Studded bearing	force control by optical sensor

Advantages:

- * Hardware programming in machine language (assembly) in order to increase the speed and calculations by the processor
- * Optical process design technology
- * The design technology of ultra-precise mechanical displacement system
- * System design technology with very low mechanical noise
- * Visual Basic programming technology



➤ **High Frequency Eddy Current Probe for Non-Destructive Testing (NDT) in Aviation Industry**

◆ Aram Azmoon Co.

www.aa-ndt.ir



Product Introduction:

Some of the engines installed on airplanes have a part that may crack. This section is spread around the engine and its accessibility is limited by various components of the engine. If this process continues, the abovementioned cracks will extend on the engine body as well. Since these cracks are very small and invisible to the naked eye, and because it is very important to detect these cracks before the critical time, the inspection method using high frequency eddy current probes is the most effective method to discover these defects in aviation industry.

Founded:

1996

Application:

Detecting surface cracks on various metals in aviation industry

This product is final B2B equipment.

Technical Specifications:

probe tube material	The material of probe wire	The size of the shield	board
Brass or copper	Copper with 99.98% purity	Outer diameter 2 -2.5 mm Inner diameter 1.8 mm	2 layers

Advantages:

- * Technically equal with similar foreign products
- * Lower production cost compared to similar foreign products



Application:

Controlling the level in danger prone areas as in chemical, petrochemical and refinery, oil and gas industries, etc.

➤ **Explosion Proof Magnetic Switch**

🏠 Tehran Delik Co.

www.tehrandelik.com



Product Introduction:

A switch is a device for controlling the level of liquids in tanks, with the help of which a switch or an electrical signal is received at the desired level of the fluid. The magnetic switch is installed in the required number according to the height of the tank on the body of the tank at switch points. When the liquid level reaches each of these points, an alarm is received. This equipment works with the magnetic field of the floater. The floater inside the gauge is a part that floats on the surface of the liquid. Due to the presence of a magnet in the floater, a magnetic field is created around it, and as soon as the floater reaches the switch point, it is coupled with the magnetic switch and gives an alarm. The magnetic switch can be installed directly on the tank without the need for a gauge.

Founded:

2001

This product is final B2B equipment.

Technical Specifications:

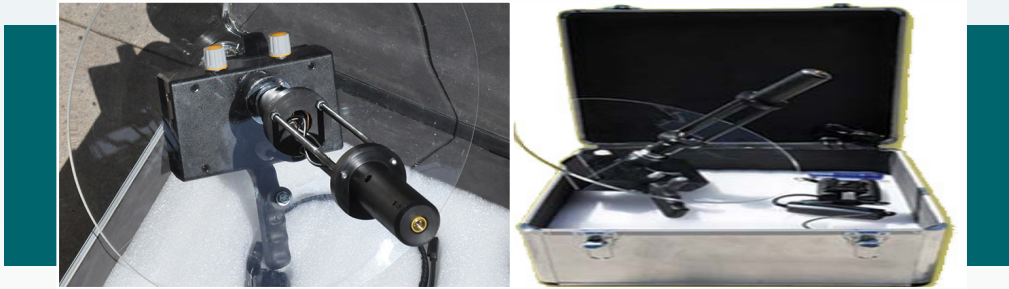
Ambient temperature	process temperature	Housing Material
-50...+80°C	-197...+460°C	Aluminum/stainless steel

Advantages:

- ※ Having a better structure than the similar foreign products
- ※ Larger switch compartment for easier use by the user

International Standards or Permissions:

- ※ ATEX
- ※ IECEx



Application:

Detecting leakage currents in network equipment in electricity distribution overhead lines

➤ Ultrasonic Leak Detector

◆ Maeraj Eng Co.

www.maeraj.ir



Product Introduction:

Finding defective equipment, especially in situations where an internal punch may occurred in the equipment, is one of the problems of troubleshooting in air networks. Therefore, Having a device that can reveal partial discharge in the insulator will help significantly in determining the faults and fixing the errors in the electrical network. Using a dish and an ultrasonic sensor, the ultrasonic leak detector receives all the sounds that occur in a device due to internal leakage and are outside the range of human auditory, and converts them into the hearing threshold of human ear and in this way identifies the faulty equipment.

Founded:

2005

This product is final B2B equipment.

Technical Specifications:

Frequency range	Central frequency	sensitivity	Battery type	weight
35 – 45 kHz	40 kHz	1 nC per 2.5 m distance	Li-ion 7.4V DC	1.3 kg

Advantages:

- * Designing and producing leak detectors based on ultrasonic sensors
- * Detecting small leaks inside the equipment with a very low percentage of error
- * Having the ability to save information related to equipment leakage on the network and its geographical location for future evaluations



- Instrumentation Equipment Including Vibrating Wire Sensor, Steel and Concrete and Weld Strain Gauge, Electrical and Mechanical Crack Meter (Joint Meter), Borehole Extensometer with Pin Module

◆ Payab Zamzam Co.

www.payab-zamzam.com



Product Introduction:

Strain Gauge: Based on vibrating wire technology and modal analysis, the sensor is buried inside the concrete or ... and based on the wire's exciting frequency up to 3 kHz and with an accuracy of 0.1 Hz, it measures the concrete's resistance to force. .

Electrical and Mechanical Crack Meter: Fastened at a point of the wall that has a crack and shows that the crack is opening or closing; In the electric type, the technology is with a vibrating wire, in the mechanical type, they measure manually with an open and closed caliper.

Borehole Extensometer with Pin Module: Used in tunnels to predict the displacement of the tunnel; The product is connected to the cement by injecting stone and then the amount of displacement is read using a vibrating wire or a caliper.

Convergence meter or the main module of the vibrating wire sensor: For reading the displacement between two walls with an accuracy of 0.01 mm, which is read using a vibrating wire or caliper.

Founded:

2001

Application:

Measuring displacement, strain and bending of structures and tunnels in construction projects

This product is final B2B equipment.

Technical Specifications:

- * **Body material** Body material: steel
- * **accuracy:** 0.01 mm

Advantages:

The innovative and high-level process of the stimulation pulse generation mechanism and string oscillation reading, as well as the vibrating wire manufacturing process



➤ H₂S Gas Sensor

◆ Mizan Microchip Techniques Co.

www.mmt-co.com



Product Introduction:

Due to the ever-increasing development of the industries as well as refineries and environments related to the oil and gas industry, protection and care against the risks caused by gas leaks, explosions and fires are of great importance in these places. The gas analyzer with the dedicated H₂S sensor is used to measure concentrations between 0.1 and 300 ppm in the oil, gas, petrochemical and refinery industries in order to adjust and service industrial boilers and control the flue gases of chimneys and gas turbines. It is noteworthy that this device is designed and made portable.

Founded:

2015

Application:

- ※ Measuring concentrations between 0.1 and 300 ppm in oil, gas, petrochemical and refinery industries
- ※ Adjusting and servicing industrial boilers as well as controlling flue gases of chimneys and gas turbines

This product is final B2B equipment.

Technical Specifications:

Detection range	Ambient temperature	Relative humidity	Ambient pressure
0.1 – 300 ppm	-5 to +65 °C	5% – 95%	0.6 – 1.1 bar

Advantages:

Designing sensors that is modelled on the products of American-based company (MSA) and German-based company (Fraunhofer).



Application:

Measuring the amount of vibrations in the surrounding environment

➤ Electromechanical Vibration Sensor for Flow Speed, Pressure and Depth

◆ Daria Co.

Product Introduction:

Vibration sensors are piezoelectric accelerometers that sense vibration. These sensors are used for measuring fluctuating accelerations or speeds or for normal vibration measurement. Maintenance professionals use the sensors in order to predict the maintenance of machinery, reduce overall costs and increase the performance of the machinery. Examples of applications where the vibration sensors are used: Process control systems, aerial navigation and underwater-applications.

The electromechanical vibration sensor was inspired by Garra typhlops (Iran cave barb) fish and is able to measure factors such as depth, pressure and the speed of the fluid by measuring the weak vibrations of its surroundings. It is also possible to visualize the environment like the Garra typhlops fish by analyzing the measured vibrations.

Founded:

2015

This product is final B2B equipment.

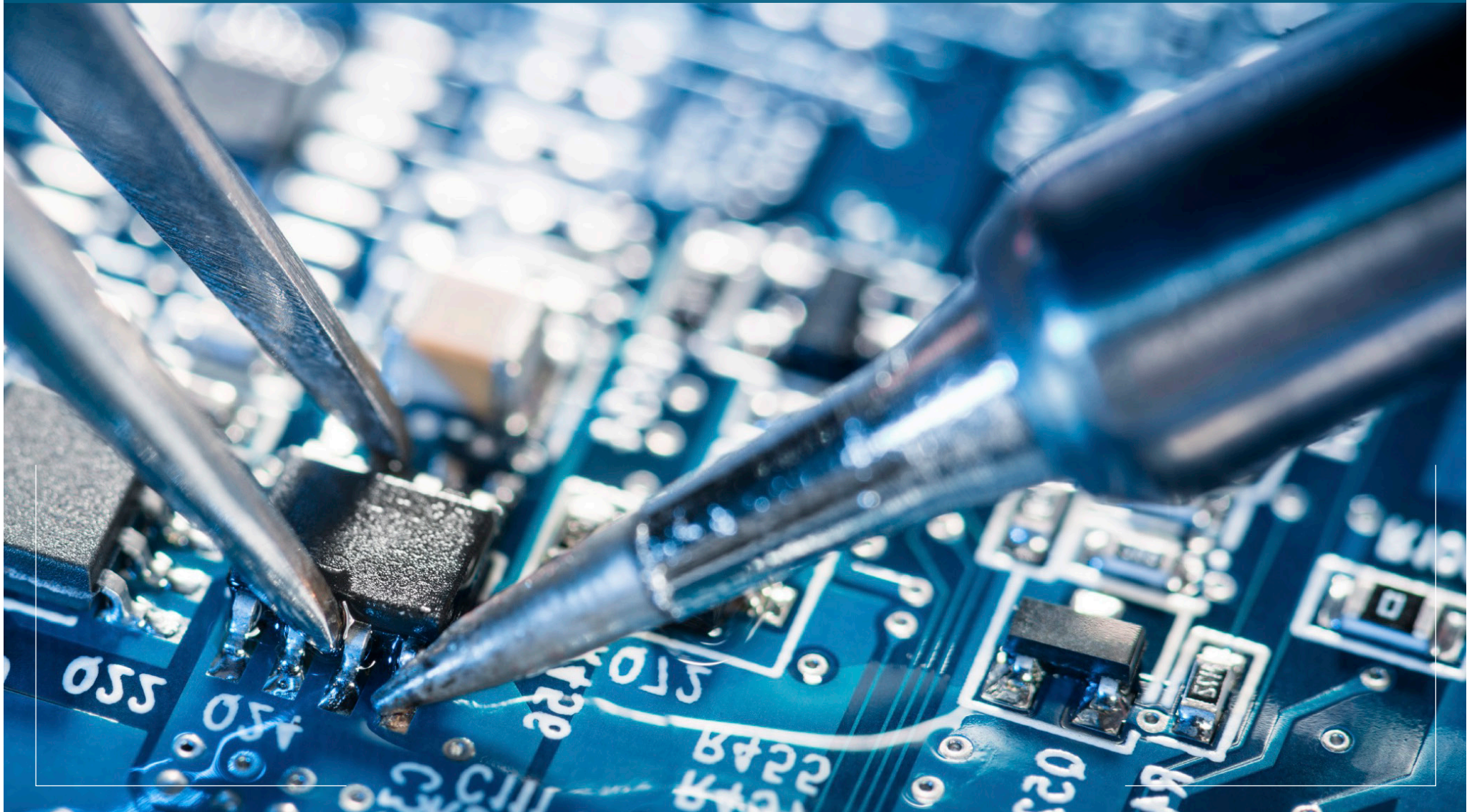
Technical Specifications:

- * **Threshold limit of measurement:** 2.5mm/s
- * **sensitivity:** 0.82mV/(mm/s)

Advantages:

- * Design technology of micro electromechanical devices
- * Manufacturing technology of microelectromechanical sensor
- * Sensor coupling technology to electronic devices
- * Labview programming technology to read the microelectromechanical sensor response

Third Chapter
Microelectronics



3rd CHAPTER

First Chapter

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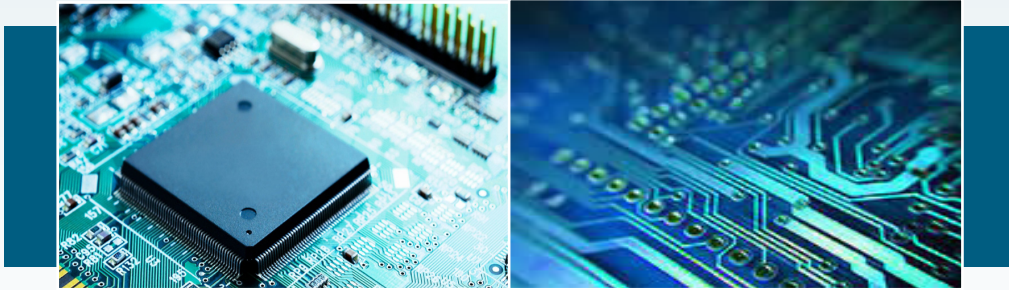
Sixth Chapter

Microelectronics

Designing and Manufacturing Integrated Circuits | 192

Spin Coater – 9000 RPM | 194

Three Types of Lithography Device: One-to-one (Lito MC), Reduction (Litho-Mask Reduction LA10) and Reduction with Wide Effective Surface | 196



➤ Designing and Manufacturing Integrated Circuits

◆ TFM Chip (Tarashe Fanavar Mad) Co.

www.tfmchip.com



Product Introduction:

Automotive chips: Automotive chips are used in various parts of the car. Among automotive products, we can mention the regulator and op-amp, which are necessary in all the electronic circuits of the car. Also, in order to establish communication between different parts of the car and the central controller, a transmitter and receiver are needed so that the information can be transmitted without being corrupted. The company provides several car transceiver chips in this field. In addition to those radars, FMCW is also one of the chips that will be produced in the company soon. All the manufactured car chips comply with the different car standards of the world.

Telecommunication transmitter-receiver chips: Telecommunication chips form the core of long-distance and microwave telecommunication systems and are used to direct the sending or receiving path. These chips are used in frequencies from 2 GHz to 40 GHz (including Ka, Ku, X, C, S frequency bands) and according to the use of the case, they have different parts, the most important of which are low-noise amplifier, phase changer, and attenuator.

Low-noise amplifier chips: These chips are a vital part of wireless telecommunication receivers and telecommunication signals enter them after the antenna. In fact, the sensitivity of the receiver is determined by this chip. These chips are used in frequencies from 2 GHz to 40 GHz (including Ka, Ku, X, C, S frequency bands).

Power amplifier chips: These chips are a vital part of telecommunication transmitters and telecommunication signals are amplified by them before entering the antenna. In fact, the range of the transmitter is determined by this chip. These chips are used in frequencies from 2 GHz to 40 GHz (including Ka, Ku, X, C, S frequency bands.)

Founded:

2014

Application:

- * **automotive chips:** providing board power supply and voltage amplification in car boards
- * Telecommunication transmitter-receiver chips: sending data in land and sea radar systems
- * **Low-noise amplifier chips:** increasing the sensitivity of the receiver and reducing the noise effect of other receiver blocks of radars, mobile phones, etc.
- * **Power amplifier chips:** amplifying the signal sent in radars, wireless radios, etc.

This product is final B2B equipment.

Technical Specifications:

automotive chip				
Distance measurement accuracy	Noise	Output power	Output voltage	Input voltage
20 cm	15db	13dbm	5V	5-27V
Telecommunication transmitter-receiver chips				
power efficiency	Noise	Ouput power	Output Voltage	frequency
12db	8db	30m W	5V	8-10 GHz
Low noise amplifier chips				
Power efficiency	Noise	Power limiter	power	frequency
21db	2.3db	2W	5V	28-38GHz
Power amplifier chips				
Current consumption		Output power	power	frequency
1.2 A		10W	7V	6-18GHz

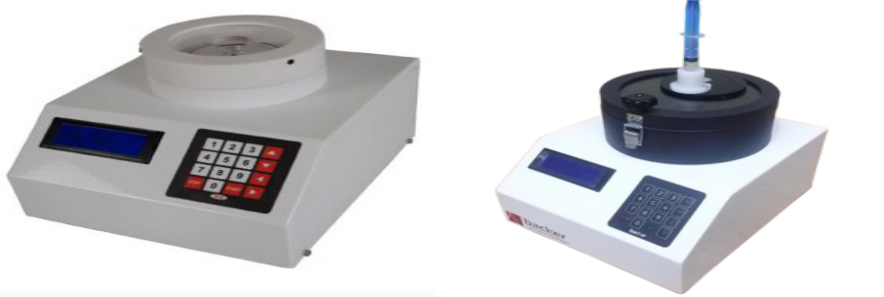
Advantages:

Chips cannot be copied

International Standards or Permissions:

Automotive chip:

- * ISO 26262
- * ISO 7637
- * ISO 17987
- * ISO 11898
- * AEC-Q100



➤ Spin Coater – 9000 RPM

🏠 Viera Tejarat Backer Co.

www.backerco.com



Product Introduction:

This device is used to produce layers as thin as micrometers and nanometers from soluble and gel materials. The structure of the device has a spinning disk, and the substrate on which the thin layer is intended to be created is placed on this spinning disk and after that, the desired material is placed on this substrate. With the rotation of the spinning disc, the material is spread on the substrate and produces a thin layer on the substrate. The final thickness created on the substrate depends on several factors, including the physical properties of the material, such as the density and viscosity of the material, acceleration, rotation speed, and the material of the substrate.

Founded:

2010

Application:

- * Coating soluble and gel materials such as sol-gels, polymers, paints, etc.
- * Coating photoresists to define patterns in the production of microcircuits
- * Producing compact discs such as CD ROM and DVD ROM
- * Producing magnetic disks
- * Manufacturing semiconductor devices
- * Making light diodes
- * Making field effect transistors
- * Thin film research on paints and polymers

This product is final B2B equipment.

Technical Specifications:

Slope time	Rotation speed	Controller type	dimensions	Operating voltage
1-59 seconds	500-9000 rpm	Adptive PID controller	24 × 27 × 23 cm	220 V – 50 Hz

Advantages:

- * Ability to spin with adjustable acceleration and speed
- * Highly accurate mechanical system with very little slack to create a completely uniform layer



- **Three Types of Lithography Device:** One-to-one (Lito MC), Reduction (Litho-Mask Reduction LA10) and Reduction with Wide Effective Surface

◆ Nano Pajouhan Raga Co.

www.npraga.ir



Product Introduction:

This device is a tool for creating different designs on metal and silicon surfaces. Its accuracy is 10 micrometers. One of the devices can create lines with a distance of 10 micrometers and the other device can create lines with a distance of 3 micrometers next to each other, which is very useful in manufacturing electronic devices. Mask-reduction lithography is a process in which the desired design and pattern are created with high precision on the desired surface. Access to high accuracy, entering the microscopic world, high response speed, small size of parts and low cost are among the features of this method.

Founded:

2014

Application:

Manufacturing micro electronic components, manufacturing all types of sensors and micrometer laboratories on a chip in different industries

This product is final B2B equipment.

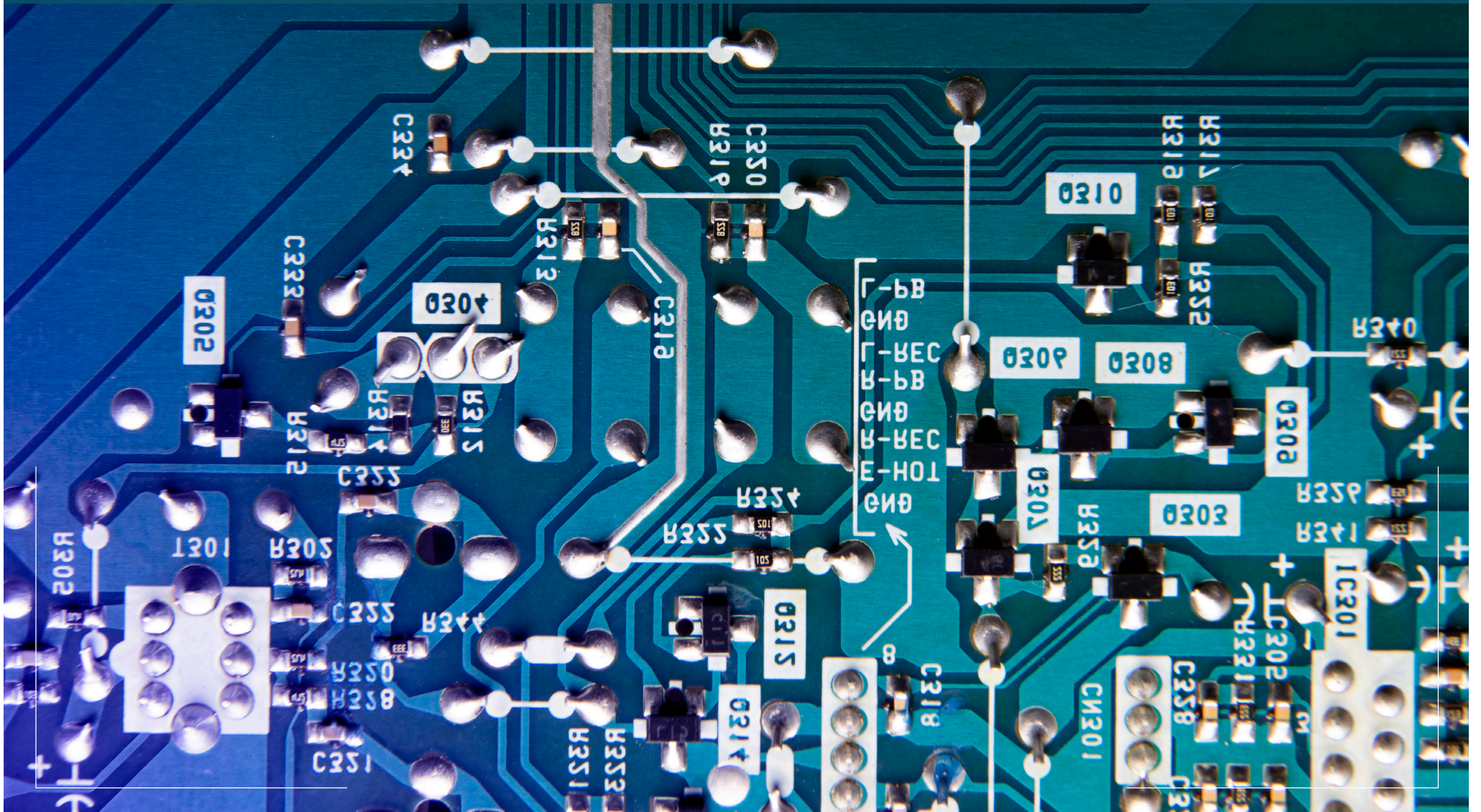
Technical Specifications:

body material	calibration glass material	patternable effective surface	lithography accuracy	The light source wavelength
plexiglass and aluminum profile	chrome	A circle with a diameter of 1 cm	10µm	435 nm

Advantages:

- * Optical process design technology
- * Highly accurate mechanical positioning system
- * System design technology with very low mechanical noise
- * Very convenient and repeatable lithography mechanism design

Fourth Chapter Electronic Circuits



4th CHAPTER

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Sixth Chapter

Electronic Circuits

SMT Pick and Place Machine (PAP) | 202

Reflow Oven | 204

Sections

Assembly Equipment ○



Application:

Assembling parts in the electronic boards manufacturing industry, household appliances manufacturing industry, radio and television producing industry, industry of producing LED lamps for automotive industry, military, lighting, etc.

➤ **SMT Pick and Place Machine (PAP)**

🏠 **MRS (Maral Robot Sanat) Co.**

www.maralrobot.com



Product Introduction:

PAP is a type of programmable robot that can pick up electronic parts from a certain place and place them on the board. This robot has four degrees of freedom in the form of three linear movements along the three axes and one rotational movement along the Z axis. The coordinates of the place where the parts are picked up are programmed in the device software and also, the location coordinates where the parts are placed on the board are determined by the PCB designed file in the design software. The PAP has 4 heads, all four heads of the machine to which the nozzles are connected can move independently. Parts are removed by these nozzles, which are of different sizes. According to the size of the part, it is determined which nozzle will take which part. A high resolution camera is used for machine vision. Each piece is photographed and then processed separately by the camera. By using the science of image processing, it is possible to correct the position and direction of electronic parts with high accuracy.

Founded:

2012

This product is a final B2B equipment.

Technical Specifications:

assembly capability	placement accuracy (X,Y)	air pressure required for pneumatics	voltage usage	Device dimensions
6000 parts per hour	0.1 mm	6 – 7 bar	220 V	1500 × 1660 × 2000

Advantages:

Updating the device software using the log service



Application:

Used in the the electronic boards manufacturing industry, household appliances manufacturing industry, radio and television producing industry, industry of producing LED lamps for automotive, military, lighting, etc.

➤ **Reflow Oven**

🏠 MRS (Maral Robot Sanat) Co.

www.maralrobot.com



Product Introduction:

The Reflow Oven is a tin paste melting furnace that is designed as a tunnel. This device is controlled as a closed loop and has 5 parts, the first 4 parts are used for heating and the last part is used for cooling the board. The placed board enters the device from the entrance part, the temperature of the board in each part is measured using temperature sensors and increases sinusoidally. The temperature graphs of each part are displayed at any moment. According to the measured temperature, the device controller adjusts the temperature of each part at the desired temperature. Special heaters and fans provide the heat of the device. These heaters and fans are located at the top and bottom of each part.

Founded:

2012

This product is a final B2B equipment.

Technical Specifications:

Belt width (mm)	Heating leangth (mm)	current usage	usage voltage	Device dimensions
500	2200	21 A	380 V	1570 × 2840 × 1160

Advantages:

- * Mechanical design of this device through Sheet Metal process
- * High device security

Fifth Chapter
Laser and Photonics



5th CHAPTER

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Laser and Photonics

Construction of 3.4-meter Telescope Structure of the Iranian National Observatory | 210

Femtosecond Short Pulse Laser | 212

1064-nm CO₂ Laser Tube | 214

Laser Projection Systems for Composite Parts | 216



➤ **Construction of 3.4-meter Telescope Structure of the Iranian National Observatory (TELESCOP INO340)**

◆ Khavar Press Co.

www.khavarpress.com



Product Introduction:

The 3.4-meter telescope of the National Observatory of Iran (INO340) is the most powerful optical telescope in Iran and is considered one of the medium-sized telescopes in the world. Its design and construction started in 2010 and it was completely built in Iran. The 3.4-meter telescope has obtained a great position for Iran in the world and in the network of modern telescopes in the Northern Hemisphere. The near-Earth faint objects, the interstellar medium, the stars themselves in the galaxy, and any bright object that is up to 7 billion years away from us can be observed by this telescope.

Founded:

2007

Application:

Observing, Capturing, and recording high-quality and high-resolution sky images in observatories

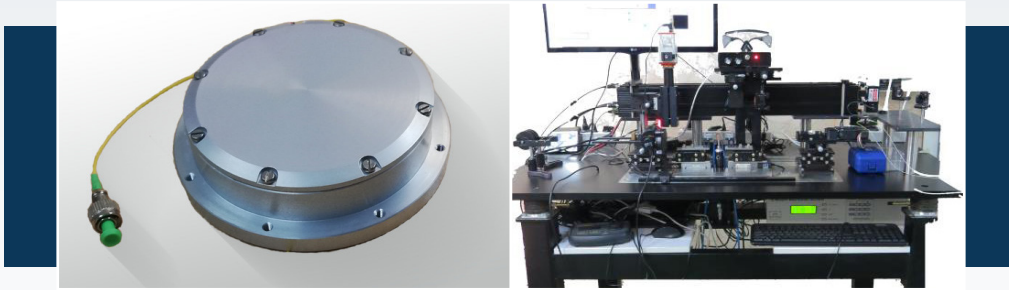
This product is a final B2B equipment.

Technical Specifications:

Original material	Total weight of the equipment	The overall dimensions of the assembled equipment
S355J2G3	70275 kg	mm 10670×7650 φ

Advantages:

High resolution and image quality by using active optics technology



Application:

Producing and detecting terahertz waves and ultra-fast imaging in the field of medicine and LIDAR

➤ **Femtosecond Short Pulse Laser**

◆ Nooran Hesgar Saba (Saba Photonics) Co.

www.nhsaba.com



Product Introduction:

Femtosecond lasers are the type of lasers whose pulse length ranges from a few femtoseconds to several hundred femtoseconds. These lasers are a subset of ultra-fast lasers with ultra-short pulses. The femtosecond short pulse laser is an advanced product using the self-modulating titanium sapphire (TiSapphire) crystal method and is capable of producing 20 femtosecond laser pulses at a central wavelength of 760-820 nanometers in a tunable manner. It has many applications in LIDAR, medicine, production and detection of terahertz waves and laser spectroscopy.

Founded:

2007

This product is a final B2B equipment.

Technical Specifications:

Output power	Repetition rate	Pulse energy	Pulse width	Working wavelength
2W	100 MHz	10 nJ	20 femtoseconds	760-820 nm

Advantages:

- * Ultra short pulses of less than 20 femtoseconds with a power greater than 1 watt
- * Computer controllable spectral tuning
- * Having a program that includes spectral profile display
- * Water-cooled board to achieve maximum stability



Application:

Producing laser light in all laser engraving and cutting devices and medical laser devices

➤ **1064-nm CO₂ Laser Tube**

🏠 Iran Padra Co.

www.iranpadra.com



Product Introduction:

The tube is a pyrex glass tube with a mirror placed at the beginning and end of it. The inside of the tube is filled with special CO₂-based gases through a special process. This part is used to produce laser light for use in laser engraving and cutting machines. This product has a lifespan of 8000 to 10000 hours and is a fully consumable part.

Founded:

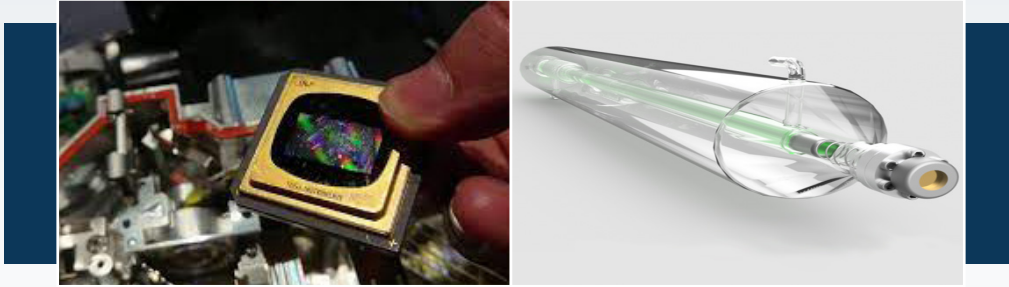
This product is a final B2B equipment.

Technical Specifications:

Output power	Diameter	Wavelength	Life span
80 – 180 W	8 cm	10.64 μm	8000 – 10000 hrs

Advantages:

- * Producing laser pulse with high quality and suitable power
- * Having a very special formulation of the gas injected in the tube



Application:

Producing all kinds of composite parts in aerospace, construction, car manufacturing, ship building industries, etc.

➤ Laser Projection Systems for Composite Parts

♣ Sadid Sazeh Co.



Product Introduction:

Laser projection is a device to control, accelerate and facilitate the production process of various composite parts in different dimensions and sizes, with different geometries that have a Hand layup process. This product can determine the layering process including the position, angle and type of layer by shining laser light on the work piece (mould) during the production process of composite parts. By doing this, in addition to increasing the accuracy, it boosts up the production speed of composite parts up to 10X. Moreover, by taking pictures and documenting during the production process. the device is able to facilitate the process of controlling the quality of the parts after production, which is one of the biggest problems in receiving composite parts.

Founded:

2017

This product is a final B2B equipment.

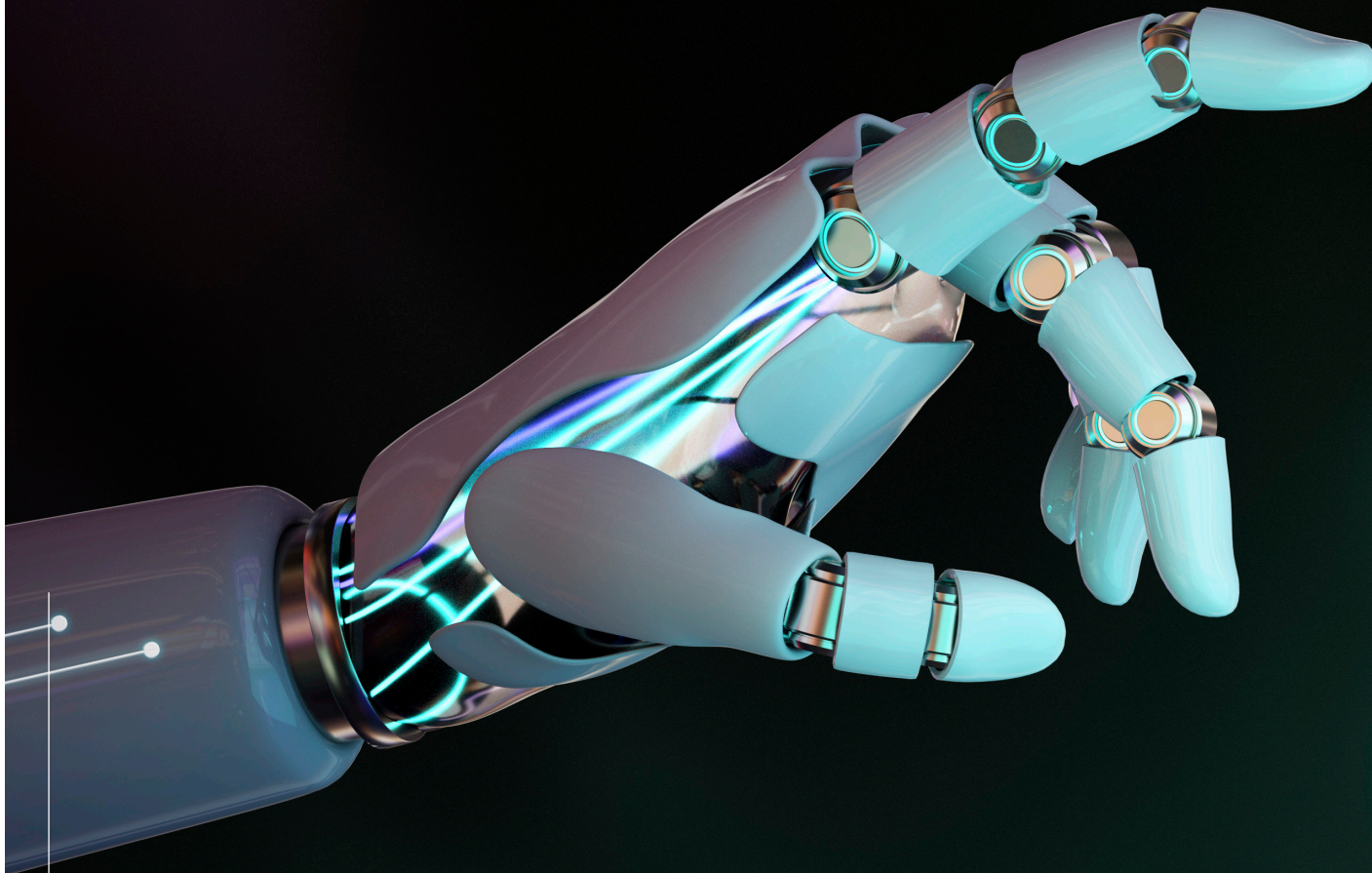
Technical Specifications:

- ※ **software:** LAPS-Composite
- ※ **Voltage:** 220 V

Advantages:

- ※ Coordinating and controlling the movement of the laser light using the joystick
- ※ Calculating and obtaining the location of the laser in space by specifying the geometric location of 6 points

Sixth Chapter
Robotics



6th CHAPTER

First Chapter

Second Chapter

Third Chapter

Fourth Chapter

Fifth Chapter

Sixth Chapter

Robotics

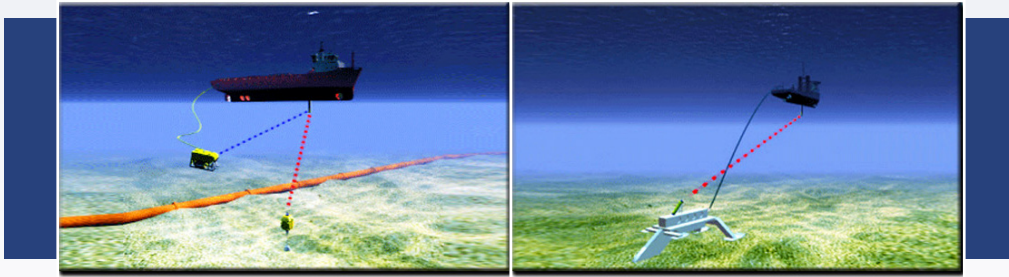
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➤ Remotely Operated Underwater Vehicle (ROV)

◆ Asia Akam Industry Co.

www.akamindustry.com



Product Introduction:

The remotely operated underwater vehicle (ROV) has the ability to capture videos and perform defined activities under water for oil and gas pipelines and offshore platforms, and through the control room on the ship, it executes whatever commands apply to it. This system is positioned in the offshore industry using an underwater positioning system. The presence of this system on vessels makes it mandatory for the vessel to be equipped with a DP system.

Founded:

2017

Application:

Filming and carrying out defined activities under water for oil and gas pipelines and offshore platforms

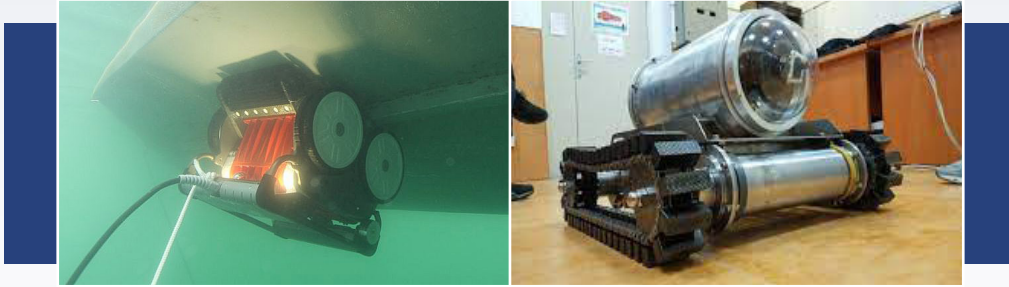
This product is a final B2B equipment.

Technical Specifications:

Vertical speed	Lateral speed	The rate of angular changes in the horizon	propulsion	weight
1 kn	1.7 kn	40 degrees per second	75 hp	1365 kg

Advantages:

domesticated technologies used in this product



➤ Ship Hull Inspection Robot

◆ Tose'e Hooshmand Paliz Co.



Product Introduction:

The ship hull inspection robot was designed and built according to the requirements of the I.R.Iran shipping Lines. This robot is used underwater without the need for a diver in the periodical inspection of commercial ships' hull. The purpose of these inspections is checking the level of cleanliness of the hull, damages, and structural monitoring from the outside of the floating hull. Due to the high speed of the water flow in some coastal areas (such as Bandar Abbas), ROVs that were previously imported from abroad, failed to self-control and could not fulfill their mission. Therefore this robot was designed, built and tested with a different mechanism. In fact, this robot is attached to the metal body of the ship by magnetic sand and moves on it. While moving, it can monitor its position on the hull and the condition of the floating hull through cameras and sensors and report to the operator remotely. it can also clean the floating hull locally if the necessary accessories installed.

Application:

Inspecting the floating hull under water without the need for a diver, with the aim of determining and cleaning the ship's hull locally.

This product is a final B2B equipment.

Technical Specifications:

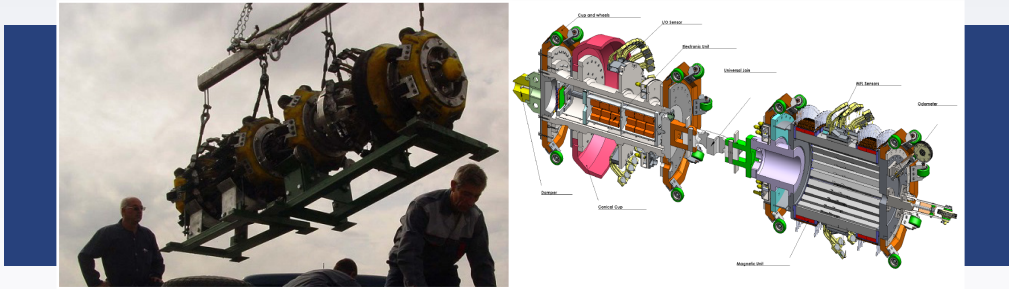
dimensionas	Maximum operational depth	Input frequency	Input voltage
42.5 × 62 × 68 cm	40 m	50-60Hz	220V

Advantages:

- * Special machining aimed at industrial sealing
- * Sufficient adhesion to the body in order to maintain the position above and below the water level
- * Combined underwater positioning algorithm (without GPS and sonar)
- * Safety of the robot in emergency situations of disconnection

International Standards or Permissions:

- * IP67
- * IP68



Application:

Inspection of oil and gas pipelines and their products

➤ **Smart PIG**

📍 Segal Pardazesh Part Co.

www.segaltech.com



Product Introduction:

The internal geometry of a pipe is examined during the manufacturing and approval stages by sending PIGs equipped with grading plates or a geometric PIG that provides complete internal mapping. During the operational phase, this is carried out using a smart PIG and a pigging plan to prepare the internal surface of the pipeline and limit the risk of blockage by monitoring the internal geometry. Smart PIGs are equipment used to inspect oil and gas pipelines and their products. This piece of equipment moves inside the pipe with fluid pressure and without interrupting the fluid and scans the pipe walls and reports the complete information about the damage and abnormalities in the pipeline to the pipeline owners.

Founded:

2008

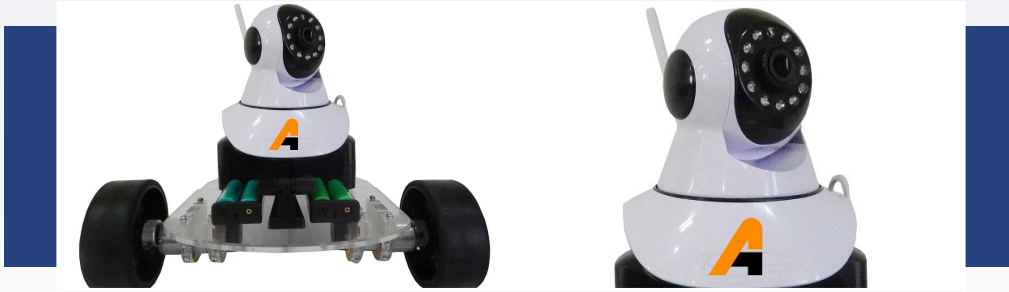
This product is a final B2B equipment.

Technical Specifications:

- * **Technology:** MFL, TFI, EGP
- * **Resolution:** 2 mm
- * **Orientation:** 10 degrees
- * **Defect types:** pitting, general corrosion, crack, scc, pinhole, grooving

Advantages:

- * High flexibility in design • Much lower cost than similar products • Faster providing of inspection services than similar products



➤ Insulator Chain Cleaning Robot with Manual Control

♣ Behin Fanavaran Aryo Co.

Product Introduction:

Considering the necessity of carrying out maintenance operations on insulator chains and washing them regularly, as well as the need to use human power and the problems of traditional methods, it is necessary to automatize this activity. This product has the ability to wash the upper and lower surface of the insulators fully automatically. By using this robot, in addition to reducing cost, one can boost up the cleaning efficiency and speed. By being placed at the beginning of the insulator chain, the robot automatically moves on the insulator chain and cleans all the insulators on both surfaces to the end.

Founded:

2018

Application:

Providing services and washing of insulator chains

This product is a final B2B equipment.

Technical Specifications:

dimensions	power	Body material	Weight
720 × 810 × 590 mm	DC source, 12 volts, 3 amps	Aluminum	3 kg

Advantages:

- ※ Advanced control over robot performance
- ※ Applying innovative and advanced mechanisms in the operation of the robot
- ※ Ability to use the robot in different weather conditions



➤ Multirotor UAV with High Flight Continuity

🏠 Mersad Co.

www.mersad.iais.co



Product Introduction:

A multirotor is a device similar to a helicopter. Its structure is in such a way that the rotation of the propeller produces the lift, which causes the multirotor assembly to fly. Its flight is more stable than a helicopter. Therefore, flying with these birds is much easier than a helicopter. In this UAV, the gasoline engine generates electricity and the generated electricity is used for the operation of electric motors. Needless to say that this drone has a battery.

Founded:

2012

Application:

Recreational flights, imaging, mapping, spraying, intelligent agriculture, cargo transportation, search, aerial patrol and industrial monitoring.

This product is a final B2B equipment.

Technical Specifications:

Flight motor	radio control	Propeller	Arduino board
U8 of T-motor company	2.4 GHz, 5.8 GHz	25 inch	Mega 2560

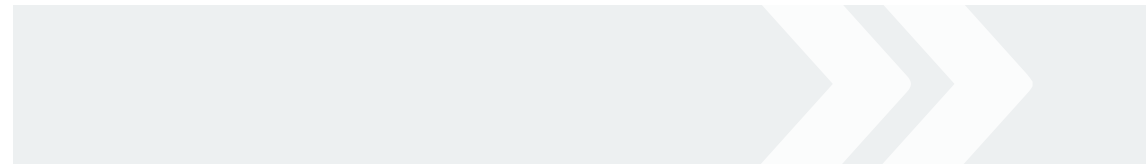
Advantages:

Using gasoline engine to generate electricity and high flight continuity



Iran House of Innovation and Technology (iHiT)

Iran House of Innovation and Technology (iHiT) is one of the types of export intermediaries that launched under the auspices of the Vice President for Science and Technology in Kenya, China, Russia, Turkey, Syria and Iraq. In addition to accessing the export instructions, these houses provide variety of services for companies to enter the interactional service markets such as: private and shared workspace, permanent exhibition of products, finding business partners and investing in the target countries of export, company registration, product registration, medicine, medical equipment and trademarks registration, dispatch and admission of business delegations, hiring local specialists to present products and service.





TEHRAN iHiT

Manager: Mohammad Karami

Field of Activity: Permanent International Exhibition | Export of products and services of knowledge-based, creative and technology companies in Tehran

Country: Islamic Republic of Iran – Tehran

Services:

- Holding permanent exhibition of knowledge-based products and services
- Holding specialized events and meetings
- Providing dedicated and shared workspace in Tehran
- Identifying export opportunities
- Identifying opportunities for scientific, technological and industrial cooperation

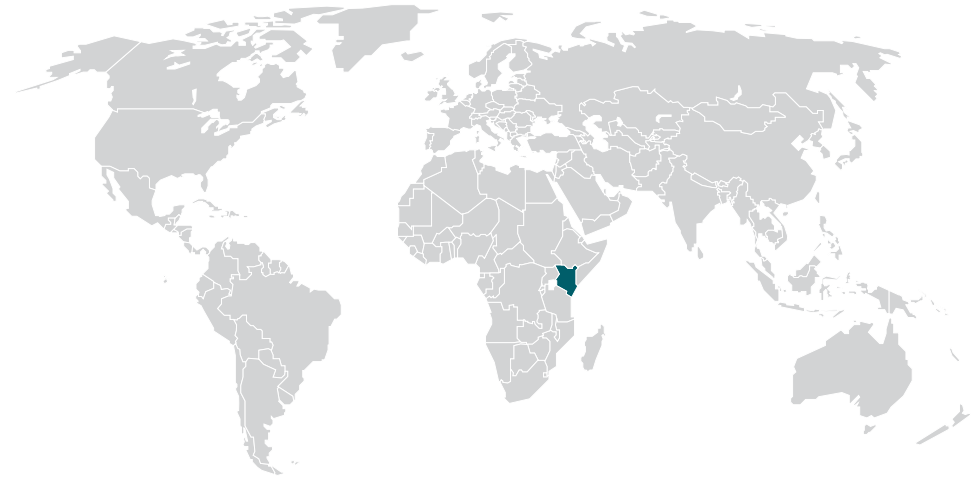
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Supervisor: Mohammad Mahdi Agharafiee

Office Phone: (+98) 912 706 9611



NAIROBI iHiT

Manager: Ali Baniamerian

Field of Activity: Export of products and services of knowledge-based, creative and technology companies

Country: Republic of Kenya – Nairobi

Services:

- Holding Permanent exhibition of products and services
- Providing dedicated and co-working space
- Holding the National Pavilion of the Islamic Republic of Iran in international exhibitions
- Export development of knowledge-based products
- Identifying opportunities for scientific, technological and industrial cooperation
- Providing export instructions of the Center for International Science and Technology Cooperation

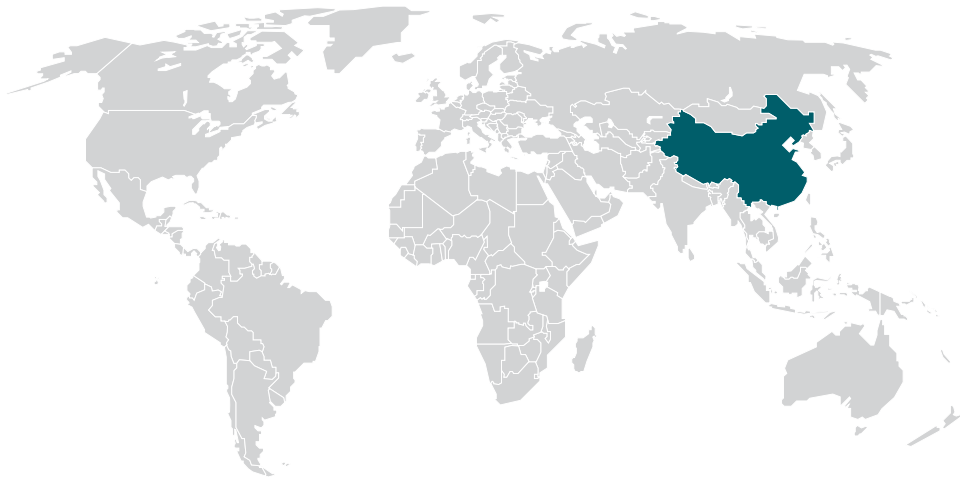
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SUZHOU iHiT

Manager: Amir Ghorbanali

Field of Activity: Export of products and services of knowledge-based, creative and technology companies

Country: People's Republic of China - Shanghai

Services:

- Holding Permanent exhibition of products and services
- Export development of knowledge-based products
- Providing dedicated and co-working space
- Identifying opportunities for scientific, technological and industrial cooperation
- Holding the National Pavilion of the Islamic Republic of Iran in international exhibitions
- Providing export instructions of the Center for International Science and Technology Cooperation

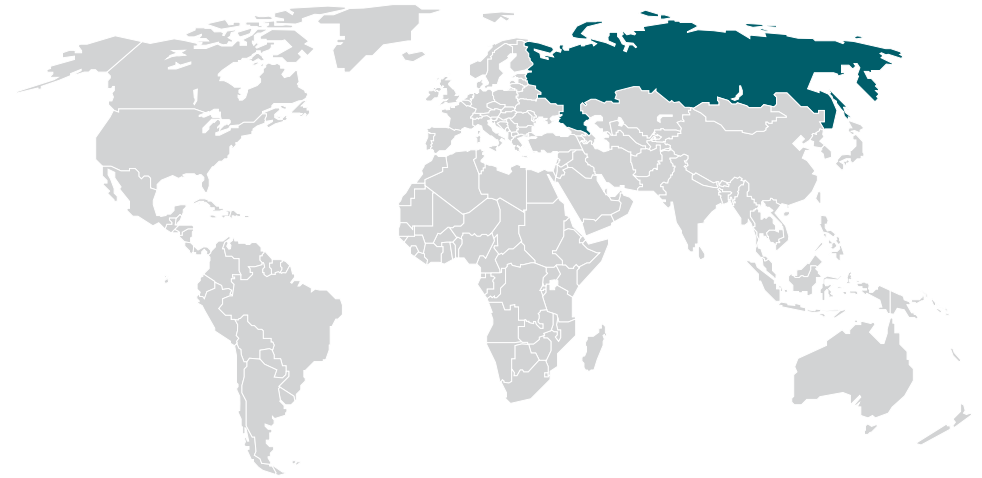
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MOSCOW iHiT

Manager: Mahdi Deilam Salehi

Field of Activity: Export of products and services of knowledge-based, creative and technology companies

Country: Russian Federation – Moscow

Services:

- Holding Permanent exhibition of products and services
- Providing dedicated and co-working space
- Holding the National Pavilion of the Islamic Republic of Iran in international exhibitions
- Export development of knowledge-based products
- Identifying opportunities for scientific, technological and industrial cooperation
- Providing export instructions of the Center for International Science and Technology Cooperation

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Manager: Masoud Hasani

Field of Activity: Export of products and services of knowledge-based, creative and technology companies

Country: Turkey – Istanbul

Services:

- Holding Permanent exhibition of products and services
- Providing dedicated and co-working space
- Holding the National Pavilion of the Islamic Republic of Iran in international exhibitions
- Export development of knowledge-based products
- Identifying opportunities for scientific, technological and industrial cooperation
- Providing export instructions of the Center for International Science and Technology Cooperation

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DAMASCUS iHiT

Manager: Mohammad Hadi Zeighami

Field of Activity: Export of products and services of knowledge-based, creative and technology companies

Country: Syria – Damascus

Services:

- Holding Permanent exhibition of products and services
- Providing dedicated and co-working space
- Export development of knowledge-based products
- Identifying opportunities for scientific, technological and industrial cooperation
- Holding the National Pavilion of the Islamic Republic of Iran in international exhibitions
- Providing export instructions of the Center for International Science and Technology Cooperation

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Iraq (Sulaymaniyah) iHiT

Manager: Hossein Salmani

Field of Activity: Export of products and services of knowledge-based, creative and technology companies

Country: Iraq – Sulaymaniyah

Services:

- Holding Permanent exhibition of products and services
- Providing dedicated and co-working space
- Holding the National Pavilion of the Islamic Republic of Iran in international exhibitions
- Export development of knowledge-based products
- Identifying opportunities for scientific, technological and industrial cooperation
- Providing export instructions of the Center for International Science and Technology Cooperation

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website: www.abc-s.com

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Office Phone: (+98) 939 124 5009

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in the field of

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