

Meh Fanavaran Electronic Parsan Co.

**IFEP**  
[www.ifepco.ir](http://www.ifepco.ir)





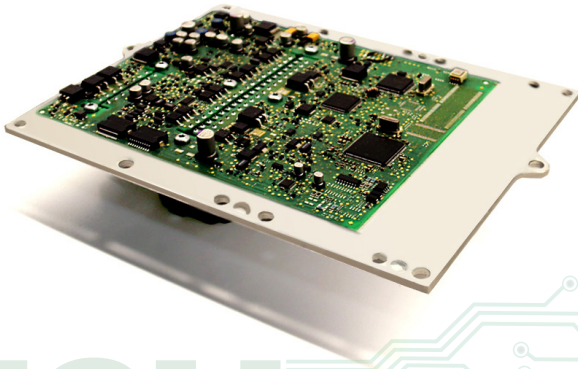
Iteh Fanavaran Electronic Parsan Co.



The knowledge enterprise IFEP, manufacturer of diverse kinds of electronic equipment and intelligent systems, was incorporated in 2018 and commenced operation to carry out activities related to study, design, manufacture, installation, launch and support of printed circuit boards, Fleet Management System (FMS), Building Management System (BMS), mechatronics, telecommunications, satellites, digital equipment, technology transfer, information technology, technical and engineering services and implementation of national and international projects.

Having recruited elite and well-experienced experts, IFEP has gained the capability to manufacture high-tech products and has made quality the priority.





## **Engine ECU Board for Mercedes-Benz Buses and Trucks**

Engine ECU board for Mercedes-Benz commercial vehicles controls fuel supply to the engine and injectors and processes the data of the sensors and the parts related to the engine.

The main specifications of the board are as follows:

- Compatible with Mercedes-Benz 8-cylinder and 6-cylinder engines
- HPI and XPI injection
- Temperature sensor input
- Flywheel sensor input
- Oil pressure sensor input
- FAN control circuits
- Operation voltage ranges between 9 V and 36 V
- Two connectors; 16 and 55 input and output pins
- Implementation of fuel injection algorithm with high technology
- Cylinder control circuits
- Timing circuits
- Command circuits
- Sensor circuits
- Micro SAK XC 2287
- Two CAN-based communication channels
- Compatible with Euro 5



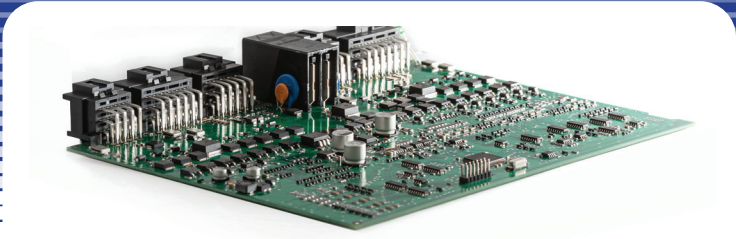


## Engine ECU Board for Scania Buses and Trucks

Engine ECU board for Scania commercial vehicles is a high-tech board which controls fuel supply to the engine and injectors and processes the data of the sensors and the parts related to Scania diesel engines.

The main specifications of the board are as follows:

- Compatible with Scania 8-cylinder and 6-cylinder engines
- HPI and XPI injection
- Temperature sensor input
- Two flywheel sensor inputs
- Oil pressure sensor input
- FAN control circuits
- Operation voltage ranges between 9 V and 36 V
- Two 35-pin connectors; totally 70 input and output pins
- Implementation of fuel injection algorithm with high technology
- Cylinder control circuits
- Timing circuits
- Command circuits
- Sensor circuits
- Two CAN-based communication channels
- Compatible with Euro 5
- Implementation of EGR



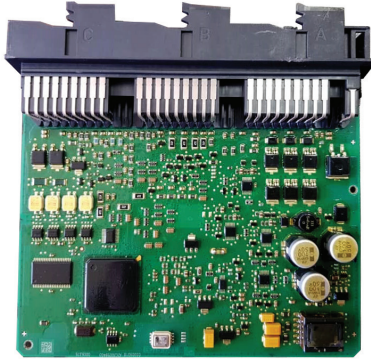
# MULTIPLEX

## Multiplex Board

The multiplex system is one of the most advanced, modern and comprehensive electronic systems in the vehicle and has transformed the vehicle electrical system in terms of efficiency and diagnosis.

The multiplex system is used to simplify the wiring and cable harnesses, increase the communication between the ECUs and other components of the vehicle and coordinate the data with a view to improving quality, safety and comfort in the vehicle and facilitating diagnosis and integrating the entire electronic system of the vehicle.

Availing itself of the capability, knowledge and speciality of its elite members of staff, IFEP has designed and manufactured multiplex printed circuit boards.



## ECU Coordinator Board for Scania Buses and Trucks

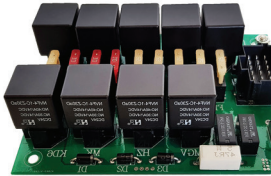
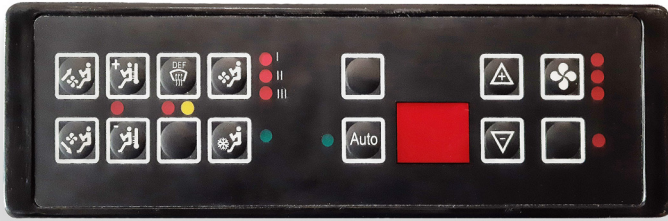
Thanks to the capability of the IFEP engineers and in line with the company's specialized activities in the field of technology transfer and manufacture of automotive printed circuit boards, IFEP has produced the high-tech Scania COO7 board which is one of the most important and widely-used ECU boards in Scania buses and trucks.

The coordinator board establishes the communication between other ECU boards and acts as the central unit for the vehicle electronic system.

The main specifications of the board are as follows:

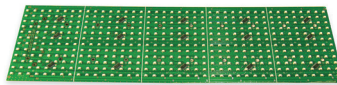
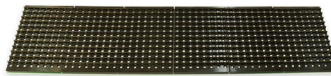
- Powerful processor MPC5554
- 4 separate CAN channels
- Operation voltage ranges between 9 V and 36 V
- Compatible with all Scania buses and trucks
- Command circuits
- Control circuits





## AC Control Boards in Commercial Vehicles

In line with its specialized activities, IFEP has designed and manufactured various kinds of printed circuit boards for evaporators, condensers, front heating and cooling systems, and AC control panels. Coupled with automatic diagnosis and fault reporting system, the control boards are designed in such a way to make possible exchange of fault codes and AC sensor data through connection to CAN.

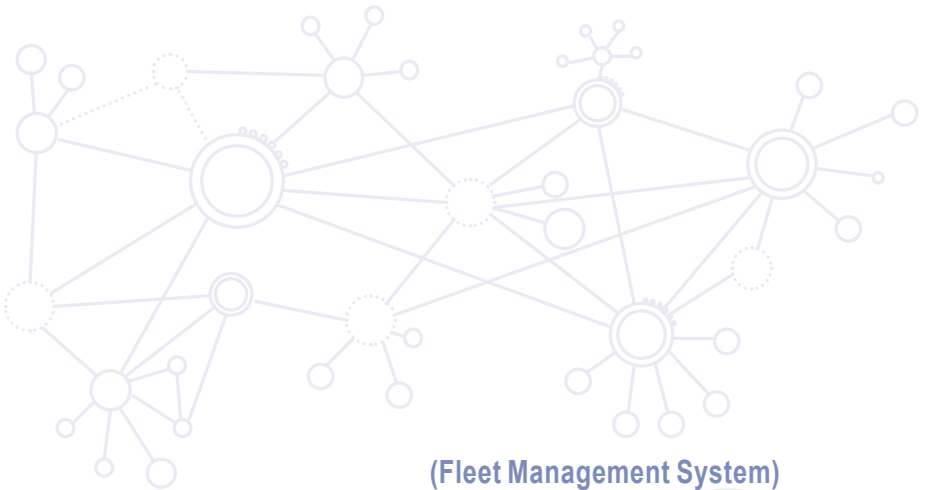


## LED Scrolling Display Board

The LED scrolling display boards are widely used throughout the world, because texts and images can be easily displayed on them. Such boards are used in city buses and coaches to display the departure and destination routes, etc. IFEP has designed and manufactured quality hardware and software for LED scrolling display boards, which are used in buses, at a competitive price.



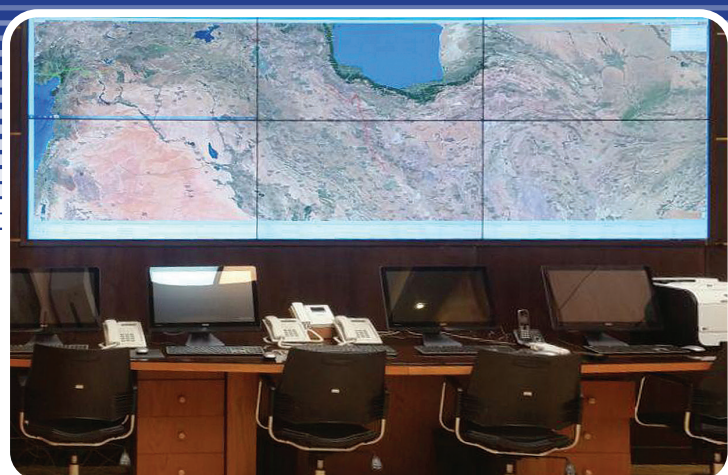
- Possibility to be integrated with different systems, including surveillance, online payment and passenger and freight registration services
- Conformity with national and international standards and executive requirements, and electromagnetic compatibility (EMC)
- Possibility to install a sensor for online measurement of and consequential reduction in emissions



(Fleet Management System)

**FMS**





**IFEP FMS has extensively reformed passenger and freight fleet management. Online diagnosis has made the system unique, which obviates the need to visit after-sales service centers and workshops.**

## **FMS Software and Hardware**

GSM module for establishment of communication with telecommunications network

- GPS module
- CAN reader module (state of vehicle's systems and online diagnosis)
- On-board sensors, including angle/tilt sensor, accelerometer, and vibration sensor
- Services for the Web, Windows and Android systems

### **Other Features**

- Access level on the basis of organizational hierarchy for operators, and assurance of data and service network security
- Possibility to establish a fleet monitoring center by compiling and analyzing vehicle transportation data
- Driving behavior analysis
- Vehicle technical status analysis
- Geo-fencing
- Report on track, distance travelled, warnings, fuel consumption, fault codes, driver performance, etc.



# BMS (Building Management System)



## Central Controller

The central controller is available in different models and sizes at customer's request. Using BMS application developed by IFEP, you will be able to control entire intelligent equipment of your buildings and create your desired interesting scenarios.

- In two sizes: 7" and 10"
- Possibility to receive messages for executing commands
- Compatibility with Android and IOS operating systems
- Supported languages: English, Persian

## Relay Boards

The relay boards are available in 2-, 4-, 8-, 12- and 16-channels which are installed to receive sensor input and execute operator commands in the smart infrastructures.



- Wired relay board



- Wireless relay board

## **Building Management System (BMS)**

Having designed and developed software and hardware of building management systems, IFEP has nationally and internationally marketed its products which are recognized to be competitive in terms of quality and price.

### **What is BMS?**

Building Management System (BMS) is a digital system which controls and monitors electrical and mechanical equipment online, and accordingly establishes a relationship and integration between them, optimizes energy consumption and reduces repair and maintenance costs of buildings.

BMS Manufactured by IFEP

- Utilizing BMS, you can monitor and control your building on your cellphone, tablet and/or laptop from any point of the world.
- Lighting system management
- Control of lighting at all points by central touch panel, smart switches and SMS
- Dimmer
- Smart lighting
- Presence and absence detectors
- Different attractive scenarios
- Heating and cooling system management
- Manual and smart control of all heating and cooling systems
- Planning for turning on and off heating and cooling systems at specified time
- Optimization of energy consumption in automatic mode
- Smart temperature adjustment
- Audio/Visual system control
- Control of electric curtains, window shades and sunshades
- Control of CCTVs and security systems
- Dispatch of security warnings to the phone numbers registered in the system
- Activation of scenarios on different occasions, such as exiting the building and sleeping
- Surveillance through CCTVs and switching between the cameras
- Smart irrigation system management
- Smart irrigation of gardens and green space based on temperature and time
- Online and scheduled preparation of pools, saunas and spas
- Smart fire alarm and extinguisher system
- It detects gas leakage and fire through gas and smoke detectors, and complements it by breaking power, closing gas valve, alarming, making phone calls, etc.
- Possibility to call an elevator
- Communication with video door-phones
- Receipt of messages for executing commands
- Compatibility with Android and IOS operating systems





## Internet of Things (IoT)

In line with its specialized activities in the field of technology transfer and communication between devices and operators, IFEP has manufactured a varied selection of products related to IoT technology.

Today, the term “Internet of Things (IoT)” has encompassed the entire ICT world. Large numbers of politicians, managers, experts and businessmen around the world have been captivated by incomparable features of this emerging technology which is concerned, inter alia, with smart energy, smart agriculture, smart animal husbandry, smart buildings, smart transportation, smart healthcare, and smart cities and environment. The Internet of Things has provided smart solutions which have influenced all aspects of human life and promised an efficient, delightful and comforting future.

IFEP has constantly taken IoT into consideration and has manufactured, developed and marketed its products, such as BMS and FMS, on the basis of Internet of Things.



## **SIPAAD (Integrated Urban Fleet Monitoring System)**

Utilization of ICT intelligent systems has been constantly focused as one of the most significant means for improvement of efficiency in transport and fulfillment of ever-increasing needs in the relevant field.

The technology has yielded a broad range of transport benefits, such as reduction in congestion, traffic management, electronic payment, environmental and safety benefits, air quality control and management, vehicle and road interaction systems, priority of public transport vehicles for saving time, and provision of real-time information at stations and stops.

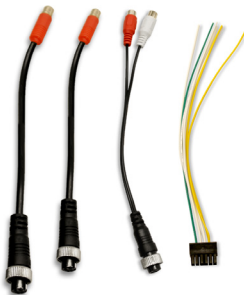
### **Hardware:**

- GPS module
- GSM module with antenna
- Processor
- Bluetooth
- Indicators
- Memory
- Supply system
- Battery backup
- Accelerometer
- ECU input
- Precision fuel gauge
- Tachometer
- Total engine operating time
- Distance travelled
- Vehicle speed
- Air pressure
- Tell-tale
- Cruise control
- Vehicle weight
- Odometer input
- ACC input
- Digital input/output
- Analog input
- RS-232 port
- IP65 rating
- Card reader support
- Camera support

- Possibility to keep waypoints when disconnected from mobile network and to resend them
- Memory management

### **Software:**

- GPS data logger indicating time, distance travelled and bearing
- Two-way communication with central system on TCP/IP protocol, sending and receiving data
- Inquiry about vehicle position from central system
- Recording events, such as connection or disconnection of main power, and CAN input interruption
- Notification of disconnection from vehicle
- Notification of data loss
- Watch Dog
- GSM-based firmware update
- Geo-fencing
- Classification of fleets and assignment of access levels to different classes





# MDVR

## Mobile Digital Video Recording (MDVR)

Fleet management and utilization of intelligent systems based on navigation together with video recording have been regarded as important means of improving efficiency in transportation sector and fulfilling the ever-increasing relevant needs. The videos captured by CCTV cameras installed in vehicles can be recorded and reviewed through MDVR. Besides tracking the fleets, the GPS module enables the fleet owners to check the videos saved in different locations.

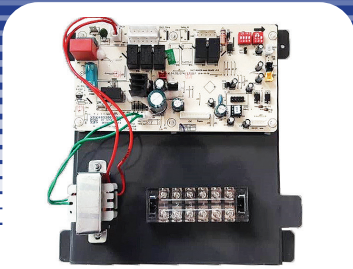
The recorded videos can be transmitted to and saved in databases via the GSM network and SIM cards. You can also back up your videos through the USB port or SD card port on the device.

### **Accessories:**

- 3G/4G antenna
- Remote control
- SIM card and SD card tray key
- Power and input cables - Audio/Visual output

### **Features:**

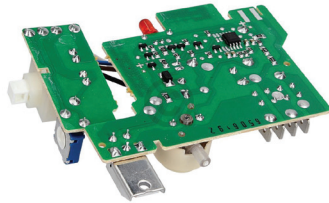
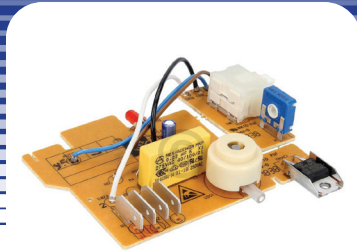
- 4 input channels for AHD and analogue cameras, whether separated or combined
- Compatible with SD card up to 128 GB
- Alarm input and output RS232 and RS485
- GPS tracking
- WiFi (optional)
- Speed warning (low/high)
- Compatible with voltage of all vehicles DC8-36V
- Video output; VGA and RCA
- Audio output; RCA
- Video system; PAL/NTSC
- Two outputs; 5 V and 12 V



## Ducted Split Air Conditioner Control Boards

IFEP has designed and manufactured regular and inverter ducted split air conditioner control boards according to international standards and with the following specifications:

- Possibility to be programmed to control all types of ducted split air conditioners
- Equipped with thermostat; temperature adjustment by operator
- LCD display
- Possibility to control the sensors
- Possibility to select cooling and heating control program
- Possibility to control the motor and condenser by input sensors
- Prevention of frozen condenser
- Possibility to communicate via IoT and WiFi (optional)



## Vacuum Cleaner Control Board

The main specifications of the vacuum cleaner control board manufactured by IFEP are as follows:

- Control of performance and status of vacuum cleaners
- Optical warning in case the vacuum cleaner suction is blocked
- Power disconnection via microcontroller to prevent damage to the motor in case the air duct is blocked
- Control of firing angle according to the power selected by the speed control knob



## Smart Irrigation System

IFEP has designed, manufactured and marketed a smart irrigation product which is recognized to be competitive in terms of quality and price. The smart irrigation system helps reduce water waste,

whether in small scales like vases and house gardens or in large scales like football fields and agriculture.

The system schedules irrigation and automatically irrigates according to the need.

The system functions in an automatic or scheduled mode. In the automatic mode, the sensors, which are planted in the vase or garden, will measure the soil moisture and the command board will, after receiving the soil dryness signal, activate the solenoid valve of the relevant spot for irrigation and deactivate it after irrigation. Whenever the plants need more or less water, the system may be scheduled to irrigate at specified time intervals.



**All IFEP products are covered  
by a -1year warranty and a  
-10year after-sales service  
guarantee.**



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