![ICS Integrated Control Systems logo]

INTEGRATED CONTROL SYSTEMS

PARKING GUIDANCE SYSTEM (PGS)

For Further Information:

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About the Compan

Integrated Control Systems is a Research and development based organization in Pakistan. Formed in 2007 as a sister concern of Integrated Devices (Pvt.) Ltd., the pioneers in Hardware and Software designing of electronic products since 1988.

During the course of its history, ICS and ID have several successful products to their name including Tele-Link, Wise-Link and Vital-Link Computerized EPABX, Call Loggers, IVR Systems, Environment monitoring systems, Queue Management Systems, Parking guidance systems and several other specialized products for the industry and Armed forces.

About Parking Guidance System :

The parking guidance system (PGS) helps the driver find free parking space on different layers and sectors quickly.

PGS utilizes Ultra sonic sensors to detect the presence of a vehicle in the parking lot of a building. When a vehicle is parked in a location with Ultra sonic sensors installed, the same is detected and the indicators turn from Green to Red.

Numeric LED displays installed at suitable locations are updated to show the availability of parking space in a lot.

Moreover, the owners or operators can monitor the real time parking information as well as collect and analyze statistic data about utilization of each car park space.

KEY components

1. Central Control Unit(**CCU**)
2. Zone Control Unit(**ZCU**),
3. Ultrasonic Detector(**UD**)
4. LED Indicator
5. Outdoor LED Screen
6. Indoor LED Screen and PGS Software .
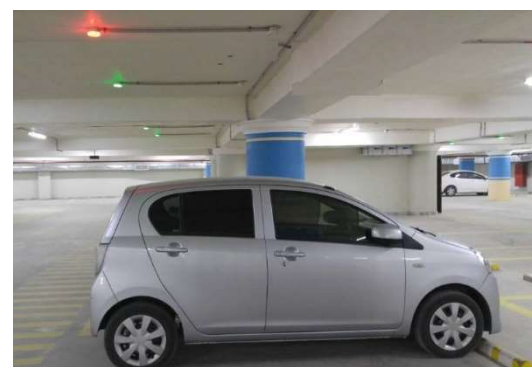
ICS PGS at Amamna Mall Lahore

Benefits of ICS Parking Guidance System:

1) Low Cost.
2) Locally designed for Pakistan Market.
3) Backed by Integrated Control Systems warranty and after sales support.
4) Easy to install, no professional technique is needed.
5) Easy maintenance, self diagnostics.
6) Obtain comprehensive management statistics.
7) Improve the utilization of parking spaces.
8) Avoid wasting time to look for parking spaces and traffic jam
9) Enhance the satisfaction of your customers.
10) Reduce the internal traffic load.
11) Ensure car park space's standardized management
12) Earn more degree of customers' satisfaction and improve your own image.

Zone Control Unit (ZCU) PGS-ZC-001-32

Zone Controller is a data pooling device with following functions:

- Connects with the ultrasonic sensors over 4 wires
- Provides power to Ultrasonic Sensors
- Communicates with Ultrasonic Sensors   via RS-485
- Connects with the Central Server via TCP/IP
- Pools max 32 ultrasonic sensors for empty/occupied status

Parking Zone Controller PGS-ZC-001-32

Technical Specifications

	Description	
1.	Purpose	Communicates with the Parking Sensor ICS-PGS-02 and sends the data back to the Central Server
2.	Communication with Parking Sensors	RS-485
3.	Communication with Server	TCP/IP over Ethernet
4.	Power to Sensors	Over same CAT5 cable with RS-485
5.	Max number of Parking Sensors	32
6.	Power requirements	AC 220 Volts 3 Amp.
7.	Environment	0-60 C
8.	Ingress Rating	IP 65

Ultrasonic Detector

PGS-PS-01 (ultrasonic parking detector) is parking sensor based on ultrasonic principle. Mounted on aa ceiling, the sensor sends ultrasonic waves to and detects the presence of vehicle by measuring the distance from sensor to the vehicle.

Features :

- Connects to Zone Controller using 4 wires.
- Connects to LED Displays using 3 wires.
- The connection to Zone controller has two wires for the Power and two for RS-485.
- Jumper selection for Sensor address setting.
- Jumper selection for distance settings

Ultra Sonic Sensor PGS-PS-01

Technical Specifications

1.	Principle of operation	Ultra-Sonic
2.	Sensing range	Programmable 5 ft, 8 ft
3.	Communication	RS-485
4.	Power Supply	1-18 Volts input
5.	Address Selection	6 bit jumper selectable
6.	Sensing Range selection	1 bit jumper selection
7.	Power Consumption	<3 watts
8.	Material	ABS plastic
9.	Indicators	LED for sense + communication
10.	Dimensions :	Round Diameter 10 cm Height : 3.5 cm

Parking Indicator:

PGS-PI-01 (Parking Indicator) is a LED indicator mounted on top of parking bay in front of each parking space. To ease the driver locate an empty space from far away.

It is connected to the ultrasonic parking sensor ICS PS-02 via 4 wire connection. The constant current driven LED produce GREEN or RED Color corresponding to Vacant/Occupied parking.

Ultra Sonic Sensor ICS PI-01

Technical Specifications

1.	Principle of operation	Constant Current LED drive
3.	Communication	4 wire to PGS-PS-02 Sensor
4.	Power Supply	1-18 Volts input
5.	Power Consumption	<3 watts
6.	Material	Transparent cover with ABS plastic
7.	Indicators	GREEN + RED LED
8.	Dimension	Round Diameter 10 cm Height : 3.5 cm

Parking Displays

Parking LED displays

Indoor Display

7 Segment LED indoor display are installed at the crossings or the entrance to the floor to show the real time parking information to the drivers. Optional arrow will show the direction to the drivers and the four digits show the number of parking spaces in a given area.

Indoor Parking Display ICS-DN-01

Technical Specifications

1.	Display Type	7 Segment 3 digit.
2.	Character Height	2 inch
3.	Display Color	RED
4.	Communication with Server	TCP/IP over Ethernet
5.	Max number of displays	255
6.	Power requirements	AC 220 Volts 1 Amp.
7.	Mounting	Pole/Bracket

Parking LED displays

Outdoor Display

7 Segment Multi Digit out door Displays are available in 10 inch height and are specially tailored to suit the premises environment.

They are installed at the outdoor entrance to show the whole car park information to the drivers.

The basic unit is a 3 digit module. A combination of these modules are tailored to suit the aesthetics of the building.

Outdoor Parking Display module ICS-DN-02

Technical Specifications

1.	Display Type	7 Segment 3 digit.
2.	Character Height	10 inch
3.	Display Color	RED
4.	Communication with Server	TCP/IP over Ethernet
5.	Max number of displays	255
6.	Power requirements	AC 220 Volts 1 Amp.

Parking Guidance Central Control Server PGS- CCS-001

Central Control Server (CCS) is the heart of the complete Parking Guidance System. It connects to the rest of the system over TCP/IP.

It monitors the status of all ultrasonic parking sensors via Zone Controllers and updates the indoor and outdoor displays accordingly.

The server also facilitates the monitoring of parking spaces on the console.

A detailed reporting system is available for statistical data analysis.

The Central control serve consists of following modules:

Configuration module

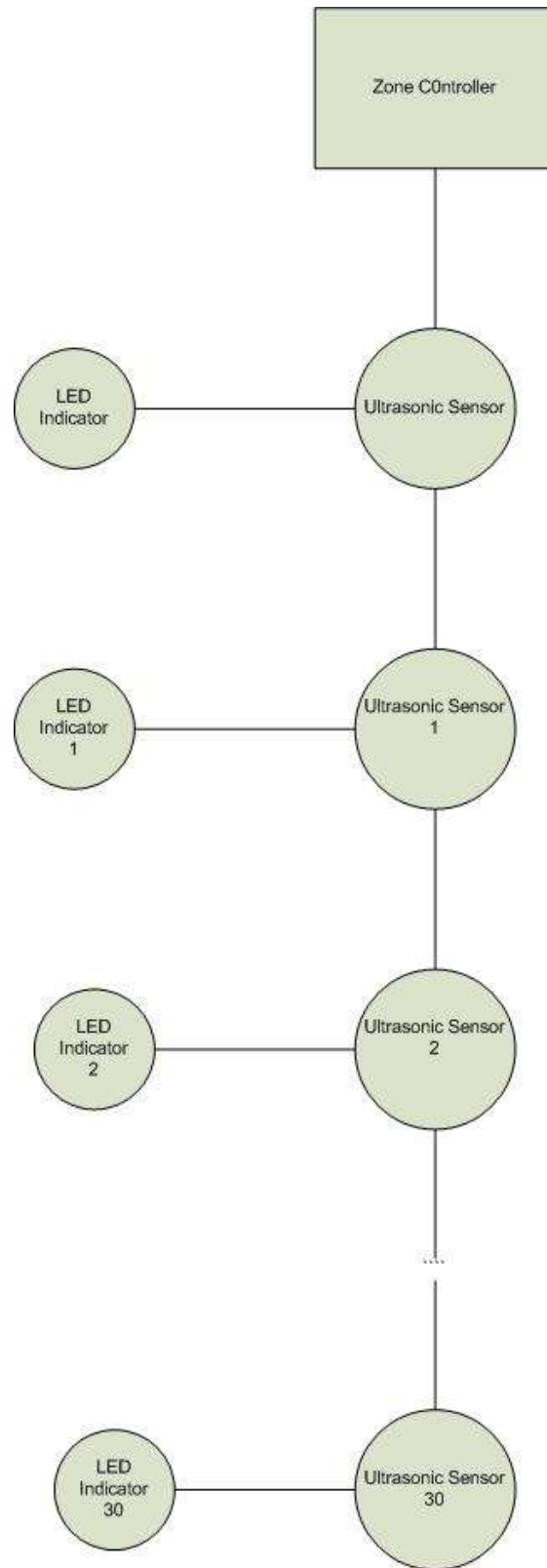Each installation has to be configured to take care of following tasks :

- Basic Communication setup
- Entering of site plan
- Number of floors
- Parking lots space identification and marking.
- Configuring/associating the Zone Controllers
- Marking and configuration of ultrasonic sensors with each zone controller.
- Configuring indoor and outdoor displays.
- Configuring reports

Display Module :

- Shows configured parking lots for Empty/Full Status.
- Parking availability of each floor

Reporting Module :

- Reports available for historic records for analyses

ICS PARKING GUIDANCE SYSTEM
BLOCK DIAGRAM

Loop Detectors
x 2+7 seg 3
digit dispaly

Router

Main Server

Main Display
7 seg x 3 digit
4 lines

Roof Top

From Other Floors

8 or 16 Port Switch

Individual Floor

7 Seg Display 3 digit x 1
Line

Zone
C0ntroll
er

Zone
C0ntroll
er

Zone
C0ntroll
er

Zone
C0ntroll
er

LED
Indicator
LED Indicator
LED Indicator 2
LED Indicator 30

Ultrasonic Sensor
Ultraso nic Sensor
Ultraso nic Sensor 2
Ultrasonic Sensor 30

Zone C0ntroller

LED Indicator — Ultrasonic Sensor

LED Indicator 1 — Ultrasonic Sensor 1

LED Indicator 2 — Ultrasonic Sensor 2

LED Indicator 30 — Ultrasonic Sensor 30

ICS Parking Sensor Connection Block Diahram