

MEGA is a distributed intelligence system for automatic management and control of room automation functions in hotel facilities of any size, residential hotels, office buildings, etc. in order to improve comfort for guests and save on heating and electricity costs. The control units installed in the rooms communicate with the PC-based central supervision station over a BUS. They are provided with independent intelligence to manage the controlled processes also without communication with the central station. The user-friendly application installed in the PC controls the following functions:

- Air conditioning/heating of rooms, bathrooms and common areas.
- Safety: the system detects bathroom and flood alarms. Intrusions are detected by controlling the status of doors and windows or by means of volumetric motion sensors. When the room is empty the lights and sockets are deactivated.
- Access control to rooms and common areas by guests and staff by means of chip card or transponder readers, with access record function.
- Room status: free, in use, to clean.
- Energy saving: the activation of air conditioning/heating and electricity in rooms depends on the presence of guests.
- Administration: the system can be interfaced with some of the most popular front-office PMS applications.
- Self-diagnostics: system anomalies are detected.
- Supervision of technological installations: you can activate lights of external and/or common areas, pumps and actuators.
- The software can be customised for the specific installation. The structure of the system, which is based on "distributed intelligence" concept, provides for two levels:
 - First level, composed of a dedicated PC with the management software.
 - Second level, composed of modular units with micro-processor (UGC and UGT control units) connected in network and to the PC with UTP CAT.5 bus cable (1x2 unshielded).

The control units are installed in the room electrical panels and manage the assigned area (room) independently. By communication with the control units, the PC supervises and coordinates the entire system automatically and detects malfunctioning, faults and alarms. The PC must be always on. In case of PC anomalies the main functions of the system are guaranteed.



mega



PTF



PTR



AIT



AS



STI



LCC



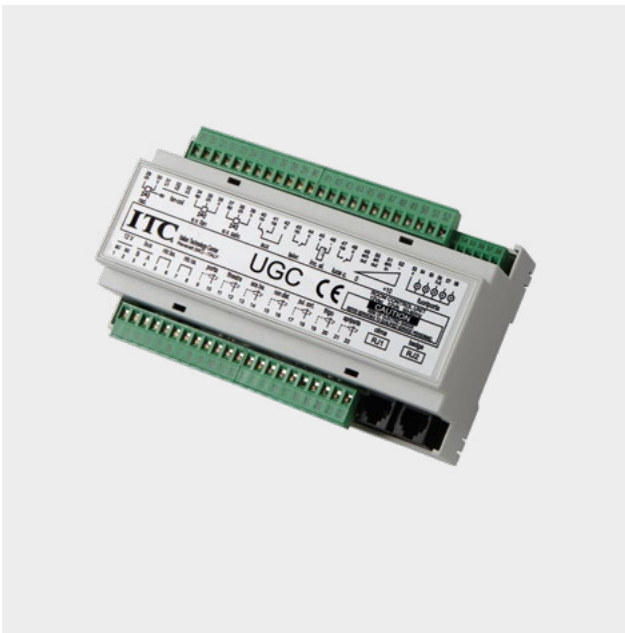
LTC



ROOM CONTROL UNIT

UGC

cod. 6100-101010



The “MEGA” control unit is housed in 9-module box for DIN rail. It is provided with analog and digital inputs for connection of the following devices:

- chip card or proximity card reader
- door-bell push button
- room activation panel
- bathroom temperature sensor
- room temperature sensor
- room temperature panel
- door open contact
- window open contact
- mini bar open contact
- bathroom pull cord for help call
- flood sensor
- volumetric motion sensor against intrusion
- “do not disturb” push button
- courtesy light push button
- door open push button from bed headboard
- It is provided with relay outputs with voltage free contacts for 230Vac - 4(2)A loads to control:
 - courtesy light
 - room electricity contactor
 - ON/OFF towel warmer electrovalve
 - 3-speed fan-coil fan
 - either ON/OFF fan-coil electrovalve or ON/OFF, modulating motorized or modulating linear radiator electrovalve (controlled with 0-10Vdc continuous voltage)

- AUX output to close electric shutters or water electrovalve in case of flood, switch-on balcony light or activate bell.

The control unit is also provided with 5 SCR outputs for out-of-door signalling (guest in room, do not disturb, room to clean, minibar to check, help call/flood) and one 12Vdc output, max. 1.2A for electric door lock. Data transmission over UTP CAT.5 bus cable with two wires, RS 485 standard. Flash-type reprogrammable microcontroller. 12Vac, 30VA power supply. Dimensions: 160x100x60mm. Weight: 0.50 kg.

CHIPCARD READER WITH SYNOPTIC

LCC

cod. 6100-111000



* Civil series › p. 97



It provides access to the room in different mode for guests, managers, staff and maintenance operators. It is provided with illuminated insertion slot for chip cards with ISO 7816 format and 2 leds for card validity. It is also provided with 5 light signals to display: "guest in room", "do not disturb", "room to clean", "mini-bar to check", "help call/flood".

It is housed in 3-module box and connected to room activator with 6-wire cable terminated with RJ12 PLUG. Weight: 0.1 kg. Depth 50mm.

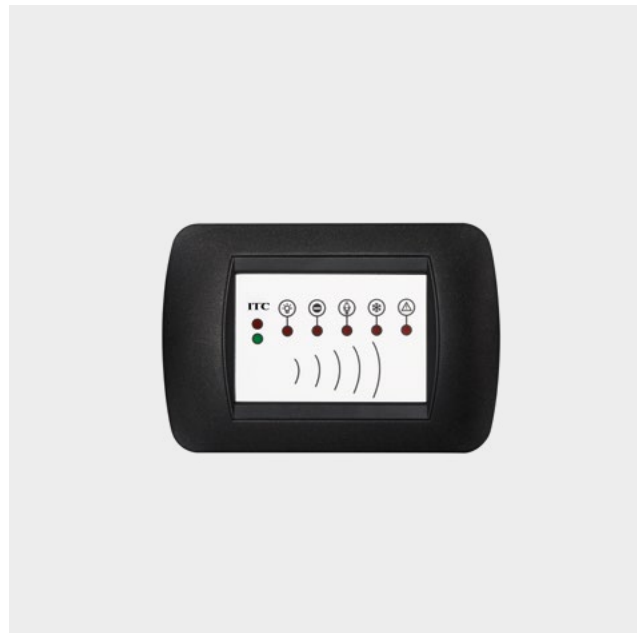
TRANSPONDER CARD READER WITH SYNOPTIC

LTC

cod. 6100-113000



* Civil series › p. 97



It provides access to the room by proximity cards ISO 7816 format in different mode for guests, managers, staff, maintenance operators, etc. Max. reading distance 5 cm. It is provided with 2 leds for card validity and 5 light signals to display: "guest in room", "do not disturb", "room to clean", "mini-bar to check", "help call/flood alarm".

It is housed in 3-module box and connected to room activator with 6-wire cable terminated with RJ12 PLUG. Weight: 0.1 kg. Depth 53mm.

ROOM ACTIVATOR WITH JACK SOCKET

AJ

cod. 6100-127000



* Civil series > p. 97



It detects the presence of guests or staff in the room and activates relevant services. Light for easier insertion of jack. It is housed in 1-module box. It is connected to the control unit UGC with 6-wire cable terminated with RJ12 PLUG.

If the "PTF/PTR" panel is not installed, the button can be used by the staff to set the "room clean" and "full mini-bar" status.

In this case a second 6-wire cable terminated with RJ12 PLUG must be used for connection to the UGC control unit. Weight: 0.04 kg. Depth 40mm.

ROOM ACTIVATOR STANDARD TYPE

AS

cod. 6100-121000



* Civil series > p. 97



It detects the presence of guests and staff in the room and activates relevant services.

It is provided with illuminated insertion slot for ISO 7816 cards and 2 flashing led lights for easier insertion.

It is housed in 3-module box and connected to the control unit Mega with 6-wire cable terminated with RJ12 PLUG.

Weight: 0.1 kg. Depth 44mm.

INTELLIGENT ROOM ACTIVATOR WITH CHIP CARD

AIC

cod. 6100-123000



* Civil series > p. 97



It detects the presence of guests or staff in the room by reading the inserted chip card and activates relevant services only if the card is enabled.

It is provided with illuminated insertion slot for ISO 7816 cards and 2 flashing leds for easier insertion. It is housed in 3-module box and connected to the control unit UGC with 6-wire cable terminated with RJ12 PLUG.

Weight: 0.1 kg. Depth 50mm.

INTELLIGENT ROOM ACTIVATOR WITH PROXIMITY CARD

AIT

cod. 6100-125000



* Civil series > p. 97



It detects the presence of guests or staff in the room by reading the proximity card inserted in the external pocket and activates room services only if the card is enabled.

It is provided with 2 flashing leds for easier insertion. It is housed in 3-module box and connected with UGC control unit with 6-wire cable terminated with RJ12 PLUG.

Weight: 0.1 kg. Depth 50mm.

TEMPERATURE SENSOR

STI

cod. 6100-131000



* Civil series > p. 97



It measures the temperature of the room where it is installed. It is composed of an NTC sensor and is installed in a standard blank insert.

It must be installed at 150/170 cm from the ground, in specific box away from heat sources or air draughts.

Weight: 0.03 kg. Depth 35mm.

FANCOIL THERMOSTAT PANEL

PTF

cod. 6100-133000



* Civil series > p. 97



It allows the guest to change temperature, speed, automatic or manual operation and switch off air conditioning. The display shows time, set and measured temperature values, speed, window status, and help call. The light sensor optimises contrast and luminous symbols provide information on operation status. The panel allows the staff to reset bathroom and flood alarms and set the "clean room" and "full mini-bar" conditions. It is housed in 3-module box and connected to the control unit with 6-wire cable terminated with RJ12 PLUG.

Weight: 0.1 kg. Depth 45mm.

RADIATOR THERMOSTAT PANEL

PTR

cod. 6100-135000



* Civil series › p. 97



It allows the guest to change temperature, switch on and off the heating.

The display shows time, set and measured temperature values, window status, and help call.

The light sensor optimises contrast and luminous symbols provide information on operation status. The panel allows the staff to reset bathroom and flood alarms and set the "clean room" and "full mini-bar" conditions.

It is housed in 3-module box and connected to the control unit with 6-wire cable terminated with RJ12 PLUG.

Weight: 0.1 kg. Depth 45mm.

SUPERVISION AND CONTROL SOFTWARE

SWB

cod. 6600-300010

Extremely easy to use, with modern user-friendly graphics, it allows for complete management of rooms and common areas in terms of accesses, temperature, electric utilities activation, alarms, signalling, etc.

Possibility of complex technological controls with dedicated software modules.

It is provided with historical database to record and print all events (alarms, signalling messages, anomalies, accesses, etc.). It is prearranged for management of additional workstations and can be interfaced to most popular front-office PMS applications and air conditioning/heating systems.

MEGA ROOM MANAGEMENT SOFTWARE

SWG

SWG25 cod. 6100-181025
Room management software from 1 to 25 rooms

SWG50 cod. 6100-181050
Room management software from 26 to 50 rooms

SWG75 cod. 6100-181075
Room management software from 51 to 75 rooms

SWG100 cod. 6100-181100
Room management software from 76 to 100 rooms

SWG150 cod. 6100-181150
Room management software from 101 to 150 rooms

SWG200 cod. 6100-181200
Room management software from 151 to 200 rooms

SWG250 cod. 6100-181250
Room management software from 201 to 250 rooms

SWG500 cod. 6100-181500
Room management software from 251 to 500 rooms

SWG1000 cod. 6100-181999
Room management software from 501 to 1000 rooms

SYSTEM OPERATION

SYSTEM OPERATION

MEGA is a distributed logic system used to manage hotel functions. The system uses small peripheral units with logic and memory, installed in different locations (such as rooms, common areas, technical rooms, etc.) and connected to the supervision PC by means of two-wire BUS cable.

Since all parameters are saved in the room control unit, a temporary anomaly of the PC will not cause system malfunctioning. Accesses, electricity, air-conditioning (with consequent energy saving) will continue on operating correctly. New cards cannot be enabled and alarms cannot be displayed. Data is transmitted according to RS 485 half duplex standard using a proprietary protocol developed by ITC srl to optimise transmission time and reduce equipment costs. Data is transmitted over balanced line, with suppression of most electromagnetic interference. The cable is a UTP CAT. 5 cable.

In special cases, such as outdoor installations, the use of an FTP screened cable with double protection sheath and earthed screen is recommended. The maximum length of the communication bus is one kilometer; an amplified signal splitter (PSA) can be used beyond such a distance for extra 1000 m. The room control unit (CPU) have been designed for installation in room unit with 12 modules (9 for CPU and 3 for transformer with 12Vac, 30VA power) for easy installation with DIN connection and easy maintenance.

The CPUs are provided with removable connectors and telephone plugs for easier replacement. The CPU code is set with a dip-switch for easy replacement in case of failure also by nonexpert staff (by simply copying the position of the cursors from the unit to be replaced). When power supply is restored, the new CPU shows the code set in the internal display to check that it is correct. The leds associated with inputs and outputs allow for checking the status (close/open) for easy identification of faulty switches (window, door, frigo bar, etc.) or blocked electrovalves, without using an external device (multimeter).

The communication between CPU and PC can be controlled on the internal display, as well as communication between CPU and chip card or transponder reader.

All system anomalies are informed in real time to the operator:

- defective temperature sensors,
- truncated bathroom alarm cables,
- and malfunctioning CPUs.

IMPORTANT

The fact that some relays are piloted in inverted mode (powered relay > deactivated output, not powered relay > activated output) guarantees electricity supply in the room and operation of the airconditioning system at minimum speed also in case of failure of the CPU or the power supply transformer until the hotel maintenance operator replaces the faulty part.

A PC server can be installed to physically connect the bus and multiple client PCs connected in network to the server PC, with full system operation from each PC. The 220Vac power supply line must be dedicated and provided with UPS of on-line type to guarantee system operation in case of power cut from 220Vac mains and to filter electromagnetic interference from the line.

Recommendations: an independent transformer should be used for every peripheral unit (CRU) for two reasons:

- a possible transformer fault will affect only one unit/room, and not all the units connected to it
- possible electromagnetic interference of a specific unit are localised and are not transmitted to the rest of the installation through the power supply.

SYSTEM TECHNOLOGICAL UPGRADE

Since the microprocessor in the Mega control unit is of flash type (i.e. reprogrammable), all existing installations can be upgraded with the latest firmware version to manage the new functions. Existing installations can be upgraded with minimal time and cost investment as if they were brand new.

IMPORTANT NOTICE

UGC control unit is mounted in DIN bar and takes 9 modules. It must be powered at 12Vac with 30VA transformer. An independent transformer must be used for each control unit and connected to a dedicated electrical line with on-line UPS.

Always disconnect power supply before making electrical connections.

Temperature sensors must be installed in dedicated boxes, at about 1.5 m from the floor, in a place protected from sunlight and away from air draughts or heat sources (such as doors, windows, perimeter walls, etc.). Do not install them above the thermostat panel, since it generates heat.

Connection cables of the input devices (such as temperature sensors, magnetic contacts, buttons, etc.) must not exceed 20 m in length.

Fan-coil and towel warmer valves can only be of ON/OFF type (electrothermal or motorised open/close valves). It is recommended to use valve controls at 220Vac voltage. The electrothermal model must be of NC type, i.e. with control mounted on the valve and not powered, the water flow must be blocked.

Radiator valve is alternative to the fan-coil. It is not possible to install both components in the same room installation. It can be of ON/OFF type, modulating motorised or modulating linear, piloted with continuous voltage 0-10V.

The room teleruptor must be at 220VAc. An additional transformer must be installed for components with different voltage.

Use a good-quality crimping tool to crimp PLUG connectors and check them with cable tester. The cable length must not exceed 15 metres. In case of multiple readers connected in cascade the length of each section must be added, without exceeding the said limit.

In case of strong inductive loads or led lights, use auxiliary relays to control them. Do not connect these loads directly to ITC units relays.

We recommend installing a 1.6A delayed fuse between relay output contact and load to protect the board in case of actuator failure.

Auxiliary relays must be used to close electrical shutters, possibly in combination with suitably dimensioned protection fuses. The shutter motor must not be connected directly to the relay of the Mega control unit.

We recommend keeping signal lines (data bus, inputs, etc.) separate from power lines.

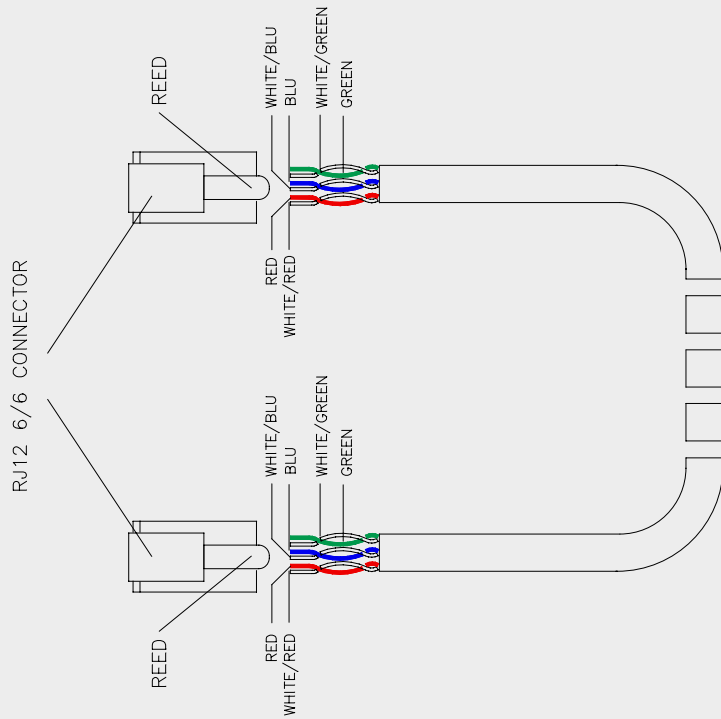
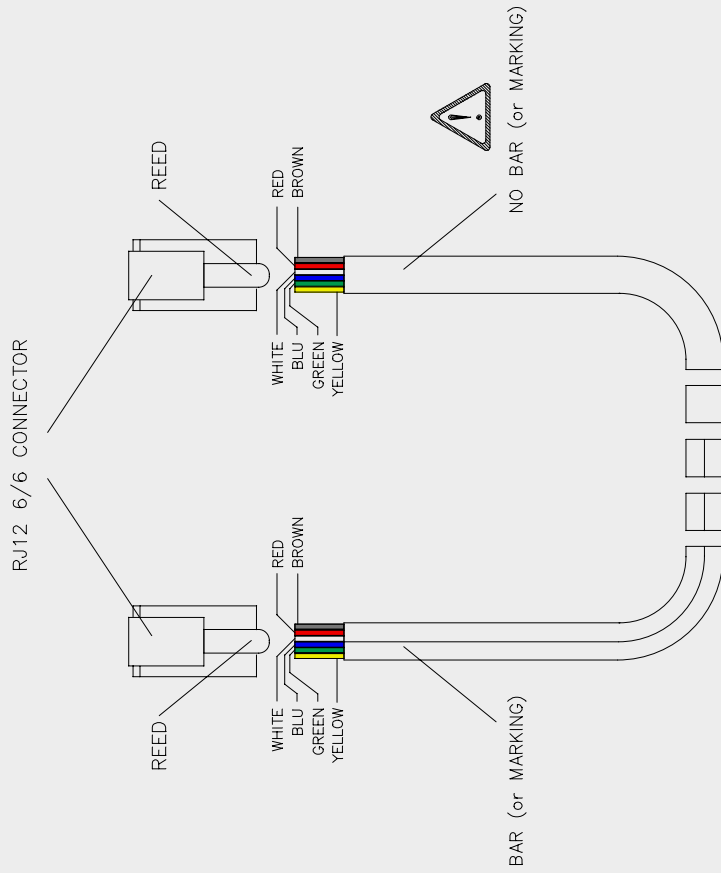
The minimum requirements of the PC used to control the installation are as follows:

- Operating system: Windows 7 professional or Windows 10 Pro.
- Intel i3 CPU
- 2500 GB hard disk
- 4 GB Ram
- S-VGA colour monitor
- 2 USB ports dedicated to MEGA system + 2 additional USB ports available
- Fast Ethernet 10/100 Mbps network board with Internet access, for potential remote assistance
- If you implement an interface with an air-conditioning system, we recommend a second dedicated Ethernet network board
- Mouse and keyboard
- Audio board and speakers

For correct operation the PC must be always on and must be dedicated to the I.T.C. technological management system.

The control software works at 800x600 pixel resolution.

CABLE HEADING FOR RJ12 CONNECTORS OF MEGA SYSTEM



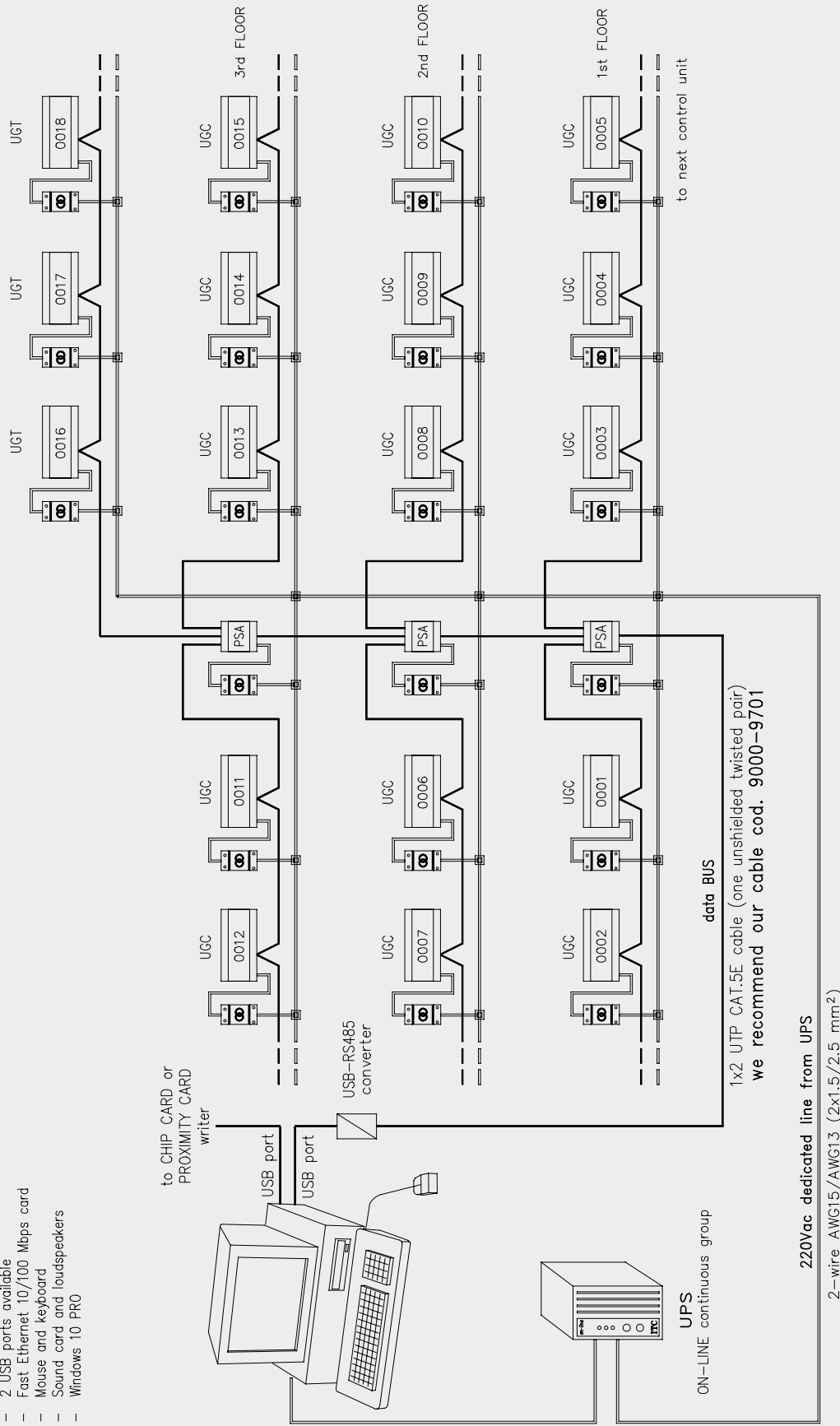
WARNING!

- ONLY USE CABLES DESCRIBED IN DIAGRAM. IF IN DOUBT CONTACT ITC TECHNICAL SUPPORT;
- ONLY USE TOP QUALITY RJ12 6/6 CONNECTORS;
- USE TOP QUALITY PLIERS FOR CRIMPING, METAL ONES ARE PREFERRED;
- CHECK CABLES USING A SPECIFIC TESTER;
- COLOURS DESCRIBED IN DIAGRAM ARE INDICATIVE.

BUS AND POWER SUPPLY CONNECTION DIAGRAM

Minimum PC specifications:

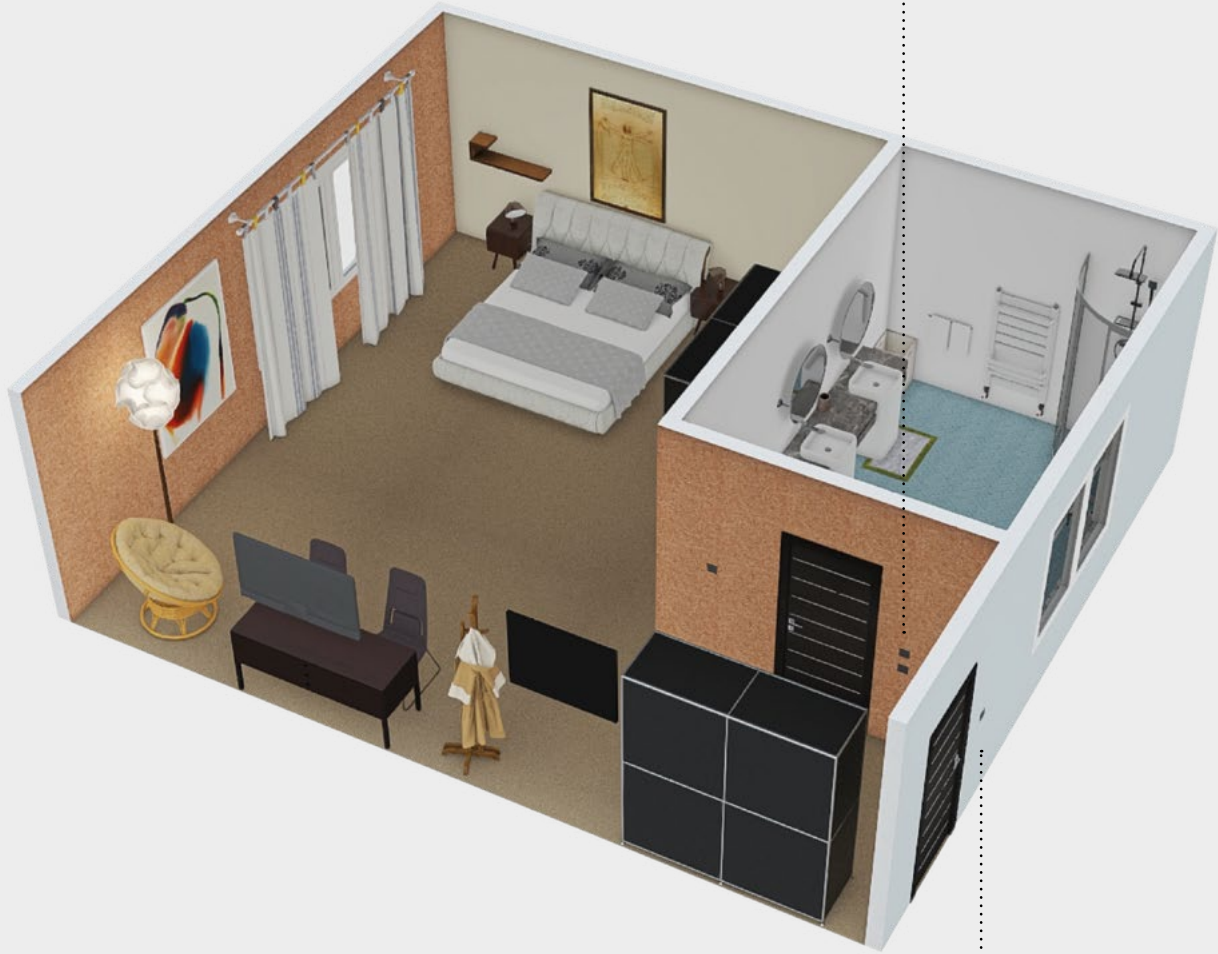
- CPU Intel Core i3
- 500 GB HDD/SSD
- 8 GB RAM
- S-VGA colour monitor
- 2 USB ports available
- Fast Ethernet 10/100 Mbps card
- Mouse and keyboard
- Sound card and loudspeakers
- Windows 10 PRO





AS

AIC-M



LCC-M

LTC-M

