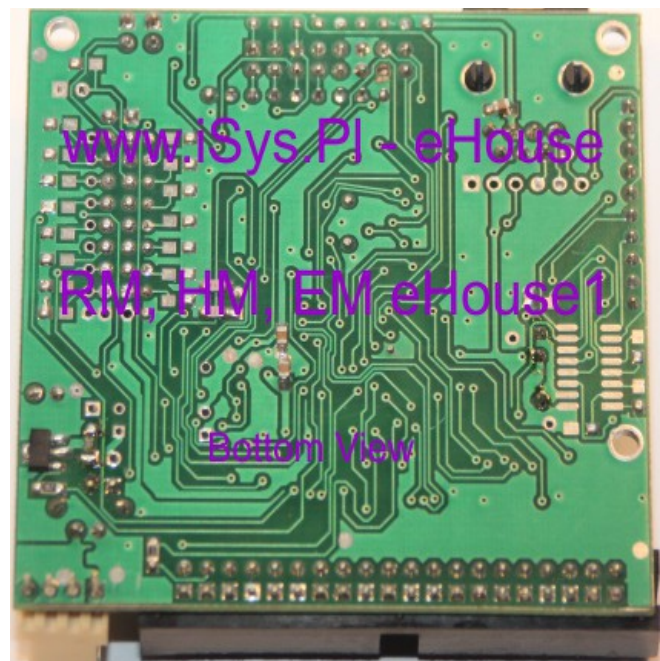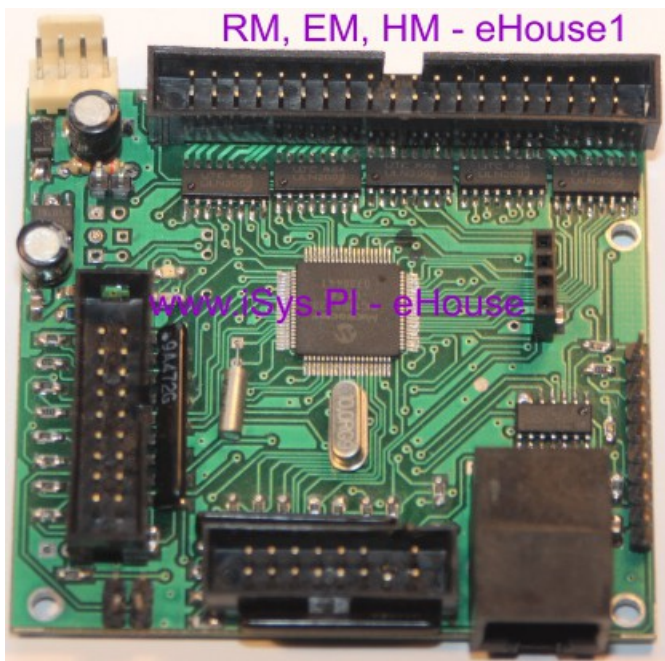# 1.HeatManager (HM) - RS-485

HeatManager is self contained micro-controller optimized to integrate and manage dedicated and sophisticated boiler room equipment:
✔ boiler room
✔ central heating system
✔ ventilation
✔ bonfire
✔ recuperation and air handling systems
✔ Optimal and economic usage of renewable energy sources

For dimensions see RoomManager section. Pictures not in 1:1 scale.

1.1.   Main functions of HeatManager

✔ RS-485 interface for communication over "eHouse 1" bus
✔ manage boiler
✔ control bonfire with water jacket and hot air distribution (HAD)
✔ manage ventilation and recuperation
✔ control ground heat exchanger (GHE) fan
✔ control water heater / cooler pump for ventilation
✔ auxiliary fan control for recuperation support

✔ manage water heater (tree ways cutout for adjusting air temperature or radiator)
✔ hot water buffer/tank management
✔ solar system
✔ over temperature alarm indicators : boiler, bonfire, solar system
✔ 16 ADC inputs (measurement points) dedicated to temperature sensors
✔ 3 PWM (pulse width modulation) outputs (low power)
✔ Programmable calendar and scheduler (248 positions) for unattended running HeatManager's events
✔ 24 programs of work incorporating settings of all parameters of heating, cooling, ventilation, recuperation
✔ 3 programs of ventilation:
    - manual
    - full auto
    - unconditional full auto

For picture and dimensions see RoomManager section.
✔ Modules can be painted with insulation materials on demand
✔ Modules may be RoHS or not on demand

1.2.   "eHouse 1" Software Package

eHouse 1 system is also equipped with auxiliary software, working under.

1.2.1   eHouse1 software package for Windows XP, Vista, 7, 8

✔ continuous, stable eHouse1 system work
✔ monitoring devices state
✔ gateways to communication links as Ethernet, BlueTooth, Internet, SMS, FTP, WWW, eMail
✔ contains application for Visualization and graphic management of system
✔ allows easy, intuitive, secure configuration, naming of whole eHouse system from PC
✔ eHouse system event editing and creating
✔ scheduler editing and programming
✔ generating images for visualization purposes
✔ generating acoustic notifications
✔ creating eHouse system logs
✔ decoding IR remote controller signals
✔ updating time to devices and synchronization
✔ data and control exchange between modules
✔ updating new firmware to all devices
✔ controlling Winamp application (playing Audios managed by IR remote controller)
✔ receiving event from TCP (built in TCP/IP server)
✔ sending devices status to TCP panels
✔ playing Acoustic notifications

✔ sending SMS notification from security system

1.2.2   Linux software package eHouse4cServer

Supervision and integration of all version of eHouse system for linux platform currently for devices:
✔ RaspberryPi (ARM6)
✔ x64
✔ x86

Main Functions
✔ Web Browser integration
✔ Apache Web Server integration
✔ TCP Clients
✔ TCP Servers
✔ HTML request to other systems, applications, programs

1.2.3   Android (Java) - Control Panel Software since 2.3+

For mobile devices:
✔ Pods
✔ Pads
✔ SmartPhones
✔ SmartTV

Main functions:
✔ Text control
✔ Voice control (Speech recognition)
✔ graphical control
✔ Online status
✔ Graphical visualization individually designed
✔ Graphical automatic for each eHouse Controller
✔ Control via WiFi, Ethernet, LAN, Internet, SMS, eMail
✔ Online status via WiFi, Ethernet, LAN, Internet

1.2.4   Java - PC Control Panel Software

✔ Linux
✔ Windows
✔ other Java enabled system

Main functions:
✔ Text control
✔ graphical control

✔ Online status
✔ Graphical visualization individually designed
✔ Graphical automatic for each eHouse Controller
✔ Control via WiFi, Ethernet, LAN, Internet, SMS, eMail
✔ Online status via WiFi, Ethernet, LAN, Internet, TCPIP / UDP
✔ TCP/IP server for connecting external panels

1.2.5 Windows Mobile 6.x+ .Net, .Net Compact Framework - Control Panel for devices

✔ Pods
✔ Pads
✔ SmartPhones

Main functions:
✔ Text control
✔ graphical control
✔ Online status
✔ Graphical visualization individually designed
✔ graphical automatic for each eHouse Controller
✔ Control via WiFi, Ethernet, LAN, Internet, SMS, eMail
✔ Online status via WiFi, Ethernet, LAN, Internet

1.2.6 JavaScript script - for Web browser client side support

✔ online status
✔ online text control
✔ online graphical control
✔ online graphical visualization

1.2.7 CorelDraw VBA script

CorelDraw Visual Basic script is necessary for creating individual visualizations for all control panels types:
✔ HTML
✔ SVG
✔ XML
✔ Custom programmed formats (text)
✔ Windows XP, Vista, 7, 8 - PC, Pods, Pads
✔ Windows Mobile .Net, .Net Compact Framework - Pods, Pads, Smartphones
✔ Java - visualization and graphical control for PCs Java enabled platforms
✔ Android - visualization and graphical control for SmartPhones, Pods, Pads, SmartTV

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