Smart Home BUS (S-BUS)

Home Automation
System Simplified Specification
2011-2012

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I- Introduction:

This Document is constructed to assist Consultant and Designer in specifying latest Home Automation Technology Standards (Smart-BUS).

II- Why to Specify Smart-BUS Products

1- Fully Integrated as Plug and Play Solution
2- Multi Lingual
3- Easy to Install by any Electrician
4- Flexible wiring and Expandability
5- Elegant finishes
6- Small in Size
7- High Specs and features
8- High Protection Level to overcome Human Errors and Environmental Issues
9- Flexible Voltage and Communication
10- Open Protocol for Developers and integrators
11- Long life performance,
12- Simple Firmware dependant, no Operating Systems, No PC no hanging software,
13- Distributed inelegance (Many to Many), Eliminating Central Controller Issues
14- Customize and multi function, that make automation very easy using minimum device Qty.
15- Auto Addressing and Manual Simple level Configuration without Need for PC Programing
16- The First automation platform designed putting Servants and Visitors Or Elderly usability as Main Standard and concept
17- Affordable Equipment Prices, Lowest Installation and Configuration Costs Factors

III- Why to Specify and Assign the Job to Smart-BUS Network

18- The Fastest Growing Brand in the History of Automation and Control Industry
19- Availability of Products and Support almost in Every Country or Region in the world
20- Fair Replacement and Warrantee Policy
21- Intact Dealers and Network Policy that is Satisfying all types and Levels of Support and Keeping the Family Grow Steadily
22- Good Delivery Status according to World Standards Measure
23- Periodical Training Programs are offered free to all dealers and Networks to upgrade them and keep them always up to date
24- One of the Most Dynamic Operation and social Active Technology Company in its industry category
25- Forums, Online Support, Regional Branches, Distribution Logistical Centers

IV- Main Specification Heading:

Supplier must Supply a completely integrated Home Automation System under a single Protocol that have decentralized Processors and controllers to enable workability of zones as stand alone or in whole networked environment with following Minimal Main typical features:

- A- The system Must communicate using Standard CAT5 or Cat6 Cabling
- B- Must Be Small in Size and Must Be DIN rail Mountable
- C- Must Be Green and do not Consume more than 35mA/24V DC per module/Device
- D- Accept Different and Mixed Wiring Topology like Daisy chain, Star, Grid or Mesh and Loop
- E- Automatically Accept 110VAC or 220VAC
- F- Communication Voltage Tolerance between 8VDC – to – 32VDC
- G- Must Have The following Minimal Protections:
    - a. Over Heat Protection
    - b. Over Load Protection
    - c. Surge Protection for both data line and power line.
    - d. Reverse Polarity Protection
- H- All Wall Panels Must Have IR control ability, LED backlighting, Laser Engraving Ability
- I- All Display LCD Panels Must Be Multi lingual with Ability to Add Pictures Illustration
- J- All System parts, indications, Must Be based on 2-way real time Communication and status
- K- The System Must Be able to Connect at Least 65000 Devices with communication ability on single Data cable to a distance Greater than 1.4 Kilometers
- L- System Must Have Ability to work under Different Modes like:
    - a. Manual Mode
    - b. Centrally controlled mode
    - c. Event Controlled
    - d. Logic Controlled
    - e. Timer controlled
    - f. Temperature controlled
    - g. Or Mix of Different Control Conditions and Configurations
- M- System Must Not Require High Technical Skills or Tools to be installed and configured
- N- System Must Have Easy Replacement and Maintenance Modules
- O- System Must be CE Approved with ROHS marked Parts
- P- System Must Be TCP/IP Enabled, with RS-232, RS-485, KNX, Dali, 0-10V, and IR enabled for any Needed Integration Flexibility to third party systems
- Q- System Must Be environmental and Economical based on the concept of: Saving Cables, Installation time, Minimizing Conduits Runs and Breakage Noise and Dust Pollution
- R- Easy User Interface and User Ability to configure his own Moods and Macros by himself.
- S- System should have bypass switch for each lights channel in case of emergency fail.

V- BUS Enabled System List of General Requirements:

The Smart Home Automation must cover all Home devices Needs inside residential Environment and its lifestyle Requirements. Accordingly it should completely supply the following systems needs Under BUS Integrated Platform as Minimal:

- A- BUS Enabled Lighting Control
- B- BUS Enabled Dimming and Scenes Control
- C- BUS Enabled DMX and color Control with LED Drivers
- D- BUS Enabled HVAC
- E- BUS Enabled Ceiling Fan Speed control
- F- BUS Enabled Infra Red Emitters network and current sensors.
- G- BUS Enabled Security Modules and Security Zone Inputs
- H- BUS Enabled Fixed User Input Devices like: Wall Touch-screens, wall Panels, LCD Panels, IR receivers, and RF Receivers
- I- BUS Enabled Full range of Sensors and Detectors
- J- BUS Enabled Music Multi Room Distributed Audio
- K- BUS Enabled SMS Communication Modules
- L- BUS Enabled TCP/IP Gateways

M- BUS Enabled Power Meters
N- BUS Enabled Room Partitioner
O- BUS Enabled Curtain Motors, Drapes, and Blinds Motors
P- BUS Enabled Door Access Panels
Q- BUS Enabled Motor Switch Over Controllers for gates, garages ++
R- BUS Enabled Web Host to enable control from any web or network accessible device
S- BUS Enabled I/O Module for valves control and temperature, water tank level, pumps ++
T- BUS Enabled Air-Quality Detector with temp, humidity, and Other gases contents
U- BUS Enabled RFID, or Smart Chip readers
V- BUS Enabled Third Party Interfaces like: Dali, KNX, RS-232, RS-485, FTP, OPC ++
W- BUS Enabled Logic and Timer Module.
X- BUS Enabled Show, Scene and Queue Control
Y- System Ability to Stream, Monitor and control Video Contents
Z- System Ability to Control Media Lifters and Presentation Switchers
AA- System Ability to Monitor Current and Operation Status of Systems
BB- System Ability to Operate and Read Long range RFID Tags as far as 20-50 meters
CC- System Ability to Connect CCTV cameras, Visitor Video Intercom, and Room to Room intercoms
DD- Availability of Hand Held Remote controls
EE- Availability of Different Compatible Mobile Tablets, and Touch screen Control Devices
FF- Long Range Car RFID Tags and Reader

VI- System By System Simplified Description of Minimal System Requirements:

The following itemized descriptions shall cover the system by system minimal features requirements in simplified way (Based of the List of (Section V):

V-A- BUS Enabled Lighting Control

This section describe the Lighting on/off Relays modules description and main functionality
- Must Be Modular of 4,8 or 12 Channels or Folds, with Modules capacity Loads of 5A,10A,16A,20A options per fold or channel per module
- Must be Din-Rail Mountable,
- Must Accept Pass through (Free Voltage Relay) Controlled Currents and Low voltage Mixed Use in the same module in fully Isolated terminals.
- Each Relay Port Must be able to be configured Separately for Latching, momentary, Continuous Pulsing, or to combine with Other Port to create fully double throw Switch-Over terminal.
- Must Be able to have Scenes and Queue Memory
- Each fold or Channel Must Be able to be controlled manually in case of By Pass Operation
- Same Module Must Operate Automatically for 110VAC or 220VAC 50/60HZ
- Have Overload Protection, Surge Protection, Reverse Polarity Protection
- All Terminals Are Simple Screw in Terminals
- Operates on BUS Line Voltage with Tolerance between 8VDC up to 32VDC

  Why Lighting Control:
  - *Central and Flexible Control Comfort*
  - *Energy Saving By Control of Wasted Power*
  - *4th Dimensional Visual Effects to Enhance Beauty*

VI-B- BUS Enabled Dimming and Scene Control

This section describe the Lighting Dimmer modules description and main functionality
- Must Be Modular of 1,2,4,6 Channels or Folds, with 10-12A Dimming Capacity per Module
- Must be Din-Rail Mountable, with good Heat Disbursement Sinks

- Must Have Built In Protection slow-burn Fuses Per Port
- Each Dimmer Port Must be able to be configured Separately for Scenes, memory, Timed slow Ramping and Dimming Etc.
- Must Be able to have Scenes and Queue Memory
- Each fold or Channel Must Be able to be controlled manually in case of By Pass Operation
- Same Module Must Operate Automatically for 110VAC or 220VAC 50/60HZ
- Have Built in Heat Protection, Overload Protection, Surge Protection, Reverse Polarity Protection
- All Terminals Are Simple Screw in Terminals
- Operates on BUS Line Voltage with Tolerance between 8VDC up to 32VDC
- Must Have Special Fluorescent Dimmable Ballast Control Modules that drive 0-10V or Dali Enabled Dimmable Ballasts.

   Why Dimming Control:
   - *Central and Flexible Control Comfort*
   - *Energy Saving By Control of Wasted Power, and Light Heat Generation*
   - *4th Dimensional Visual Effects to Enhance Beauty*
   - *Mood Lighting that Include Scenes*
   - *More Romantic and better Emphasis on objects, tasks, and Functions*

VI-C- BUS Enabled DMX Control
This section describe The Lighting Color, Shape and Intensity Controller
- Must Be Modular and BUS Enabled and can Control from 48 or 512 Addresses Each with standard DMX512 protocol
- Must be Din-Rail Mountable
- Each Module Must be able to control Color, Motion, Intensity, Shape, Speed ++
- Must Be able to have Scenes and Queue Memory
- Same Module Must Operate Automatically for 110VAC or 220VAC 50/60HZ
- Have Built in Surge Protection, Reverse Polarity Protection
- All Terminals Are Simple Screw in Terminals
- Operates on BUS Line Voltage with Tolerance between 8VDC up to 32VDC
- Optional TCP/IP, BUS, DMX All in one interface

   Why DMX Control:
   - *Central and Flexible Control Comfort*
   - *Energy Saving By Control of Wasted Power, and Light Heat Generation*
   - *4th Dimensional Visual Effects to Enhance Beauty*
   - *Mood Lighting that Include Scenes and light Agilities*
   - *Fast Speed, Professional Practice, and Local Market ready Equipment*
   - *Control of Lights: Color, intensity, Speed, Shape, Position, Motion Mix*

VI-D- BUS Enabled HVAC Control
This section describe The Heating, Ventilation, and Air conditioning Controller
- Must Be Modular and BUS Enabled
- Must be Din-Rail Mountable
- Each Module Must be able to control Multi Fan Speed, VAV, Cool, Heat
- Must Be Built on BID Logic and with adjustable configuration
- Same Module Must Operate Automatically for 12V, 24V. 110VAC or 220VAC 50/60HZ
- Have Built in Surge Protection, Reverse Polarity Protection
- All Terminals Are Simple Screw in Terminals

- Operates on BUS Line Voltage with Tolerance between 8VDC up to 32VDC
- Built In 0-10V Output Terminal
- Ability to Control Different Kinds of HVAC Systems like:
  - ✓ Chilled Water AHU System
  - ✓ Package Unit Systems
  - ✓ Split Ducted FCU Systems
  - ✓ Desert Cooler Systems
  - ✓ Decorative, Standing or wall Split Ac Units
  - ✓ Window AC Simple Units
  - ✓ VAV Enabled Air Volume Based Systems
  - ✓ VRV BACnet OPC enabled Systems, and VRV IR Enabled
- Control of Split Decorative and Wall or standing AC Units Using Infra Red
- Control 3rd party Air condition system using the BUS RS232 and OPC Interface
- Bus Enabled Paired Elegant Display LCD thermostat that is capable of the following Functions:
  - ➢ Ability to Control All Types of HVAC using Hand held IR remote control
  - ➢ Calibration of the Thermostat –V 5 and +V 5 degrees as needed
  - ➢ Display of Time and Date on screen with fan speed, Temp, Mode
  - ➢ Ability to Control the Local Unit Direct and up to 7 Slave Units of other Rooms
  - ➢ Schedule Enabled Operation for Comfort, Energy, health, and Maintenance
  - ➢ Low Set Point and High Set Point Enabled
  - ➢ Protective compressor Start and Stop Operation Default and Adjustment
  - ➢ Combined Average Of Different Room/Zone Display thermostat Logic
  - ➢ Option to Have Touch Enabled Thermostat Display with LED backlighting

  Why HVAC Control:
  - *Central and Flexible Control Comfort*
  - *Energy Saving By Control of Wasted Power*
  - *Better Health Standards due to Logical Controlled Temp Rise Diagram*
  - *Ability to Accurately Calibrate Each Zone Temperature*
  - *Ability to Add Slave Control Points for Same HVAC Unit, and Group Average, or select Master Reference.*
  - *Decrease The Need for Maintenance, Breakdown Time, etc.*

VI-E- BUS Enabled Ceiling Fan Speed Control
This section describe The Ceiling fan Speed Stepped Control Module
- Must Be Good to Control up to 6 Ceiling Fans, with 5 Speed Capacity per Fan
- Must be Din-Rail Mountable, with Good Heat Disbursement Sinks
- Must Not Cause the Fan Motor to Generate Noise at Low speed
- Must Have Built In Protection Fuses Per Port
- Must Be able to have Last Status Memory
- Each fold or Channel Must Be able to be controlled manually in case of By Pass Operation
- Same Module Must Operate Automatically for 110VAC or 220VAC 50/60HZ
- Have Built in Heat Protection, Overload Protection, Surge Protection, Reverse Polarity Protection
- All Terminals Are Simple Screw in Terminals
- Operates on BUS Line Voltage with Tolerance between 8VDC up to 32VDC

  Why Fan Sped Control:
  - *Central and Flexible Control Comfort*
  - *Energy Saving By Control of Wasted Power*
  - *Better Health Standards due to Logical Controlled Operation*

VI-F- BUS Enabled Infra Red Emitters Control Modules and current sensors.

This section describe The Infra Red Emitters Control Modules
- Must Be Good to learn and Store then Control Multi Device IR codes
- Must Have the Ability to Send Macro Driven IR Commands with pause
- Must Be able to have Cyclic Function
- Built In Current Sensor for Device Operation Status reporting
- Have Built in Surge Protection, Reverse Polarity Protection
- All Terminals Are Simple Screw in Terminals
- Operates on BUS Line Voltage with Tolerance between 8VDC up to 32VDC
- Can be Also Ceiling Mounted with Multi Directional Emotion (Option without current)
- Emitting Distance Must Be minimum 5-6 Meters

Why IR Emitters Control:
- *Central and Flexible Control Comfort*
- *Energy Saving By Control of Wasted Power of media Equipment*
- *Macro Driven Events and operation*
- *Elegance and Functionality*

VI-F- BUS Enabled Security Control Module and Security Input Modules
This section describes the Security Input and control Modules
- Must Be Modular of 4 Inputs per Module that is software configurable to be NO/NC
- Must Be 2-way status Communicable
- Have Built in Protection & Reverse Polarity Protection
- All Terminals Are Simple Screw in Terminals
- Operates on BUS Line Voltage with Tolerance between 8VDC up to 32VDC
- Very small in Size to enable Mounting even behind light switch in same wall box
- Security System Controller Module Can Control 250,000 Addressable Zones
- Security System Controller Module Have Bypass, 24Hour Monitored zones, Panic, Away, vacation, Night, Day, and other Security Preset Setup modes
- Can have Multi Security Codes and Levels
- Each security module Can support up to 8 different logical separated security Area for Arming/Disarming
- Built In Security Status and History Log
- Vacation Program schedule for long time protection scenario.

Why Security Control:
- *Less Wiring Technology (very Environmental)*
- *Energy Saving By Control of Wasted Power*
- *Safe and Secure life*
- *Extreme flexibility and expandability*

VI-H- BUS Enabled Fixed User Input Devices:
This section describes the Fixed User Interface Input and control Devices and modules

a) **BUS Enabled Wall Touch-screens:**
These are the Wall Mounted Touch screen Color display panels that are used for systems central control of lighting, Temp, Security, Media, Audio, Power ++
o Wall Touch Screen should be with high quality Color display ability can have different interface or real room picture, Floor Plan, Building façade etc.

- o Touch screen should have fast responding and action, with simple and elegant interface.
- o It should have Moods and scenes short buttons, dimming sliders and other functions
- o It Must be both TCP/IP Enabled and Bus Enabled
- o It Should Have Built in Speaker and Built in Microphone
- o It Should have video Play function ability for Viewing of Intercom and cameras
- o It Should Have Elegant Easy to Change Surround
- o It Should be Easy to Mount and Maintain wire to and from

b) BUS Enabled wall Panels:
These are the panels that are used in every room for room systems control acting as normal wall switches
- o Wall panel should have the ability for Button engraving, with LED backlighting of each
- o Wall Panel should have built in Infrared receiver and control function.
- o Wall Panel should have the ability to enable or disable IR function
- o Wall Panel should have to Lock/Unlock ability
- o Wall Panel should have the Click, double click and press function
- o Wall Panels can have single, double size buttons. And up to 6 Gangs per Panel
- o Optionally: Wall Panels can be Touch Enabled with Backlit touch areas borders lines as to be needed
- o Wall Panel must Have easy parts and fascia replacement flexibility to suite change in decoration fascia cover color / material requirements

c) BUS Enabled LCD Panels:
These are the panels that are used in every room for room systems control acting as normal wall switches and thermostat ++
- o LCD Panel should be able to support all language and picture with 2 way Real status display ability.
- o LCD Panel should support the remainders and alerts function
- o LCD Panel must be able to control lights, Media Devices, Air condition HVAC, Security, Music Volume Source and Stream Info. live dynamic display.
- o All panel should have the simple pressing, keep pressing, left right Pressing, and double click functionality
- o LCD Panel should have built in temperature sensor and Infrared receiver
- o Must Have Built in Protection & Reverse Polarity Protection
- o All Terminals Are Simple Screw in Terminals
- o LCD panel Can be locked remotely and locally
- o LCD must Be able to have multi Page menu and more than 12 pages
- o Operates on BUS Line Voltage with Tolerance between 8VDC up to 32VDC
- o LCD can optionally have direct ability to Connect Microphone for Room to room communication, Announcement function, and Baby Monitor function
- o LCD Panel must be able to display Time, Date in central Clock real time Synchronized environment
- o LCD Panel Must be able to display actual room temperature on screen

b) BUS Enabled Ceiling Mounted IR receivers, and RF Receivers
These are the Ceiling Mounted IR or RF Receivers that can be used for Local Zone systems control
- o The Receiver Must be elegant, ceiling mounted, circle dome look with white material to blend with ceiling colors
- o The Receiver should be bus enabled and can receive commands from hand held Remote controls
- o The RF receiver Type is Frequency Configured and Matched to the Remote control.
- o These types of Receivers are mainly used in areas where no easy or direct access for wall panels like open halls, and bathrooms ++

VI-I- BUS Enabled Full range of Sensors and Detectors

These are the sensors that act as the eyes, nose, skin and ears of the Automation system

- They Have different range of simple ceiling PIR and wall PIR motion sensor to 8in1 and 10in1 advanced sensors.
- All sensor types Must be bus enabled with adjustable sensitivity.
- The sensors Must Have Mechanical knock down cells to manually open the field of vision and detection Iris of the ceiling detectors
- The advanced sensor type should have at least the following functions:
    - Built in Light intensity sensor,
    - Built in PIR Motion sensor,
    - Built on Board 2 dry input Zones
    - Built in IR Receiver
    - Built in IR Emitter 360 Degrees field and 6 meter effective range
    - Built in Logic (and/or, Nand, Nor)
    - Built in security Function. that enhance the functionality of all the inputs.
- The Super Function Detectors must have all the advanced functions in addition to the following:
    - Built in ultrasonic sensor
    - Built in temperature sensor,
    - Built in 4 relay outputs
- All sensors can be enabled or disabled with many extra programmable Flags that help the installer to do all needed scenario.
- All Terminals Are Simple Screw in Terminals
- Operates on BUS Line Voltage with Tolerance between 8VDC up to 32VDC

   Why Sensors Control:

- *Less Wiring Technology (very Environmental)*
- *Energy Saving By Control of Wasted Power*
- *Safe and Secure life*
- *Extreme flexibility and expandability*
- *Compact Design and Fully Loaded features*
- *Online Status Monitoring of Zones*
- *Comfort of use and operation command*

VI-J- BUS Enabled Music Multi Room Distributed Zone-Audio

This is the Audio and BGM system that serve also as the Prompt announcer of the system.

- The Audio System must be Bus Enabled with built in stereo (2ch) amplifier 50 W.
- It has SD card Reader Slot that able to save thousands of mp3 format Music.
- It has built in Prompt and ready Alert voice massages.
- It has built in Digital FM RDS Radio.
- Built in Ethernet LAN connection via (RJ45 Connector) for Music Network streaming and uploading/downloading ++
- Built in Local source interrupt input for connection to local TV or IPod Dock.
- Built in Balanced Audio output connectors for linking to Additional Amplifiers.
- Small compact Size to enable easy and discrete installation behind TV Screen, above ceiling or on any cabinet or shelf.
- Bus Enabled communication for BUS devices, and FTP Streaming Communication
- Simple RCA Inputs and outputs for Media Device Connections
- Simple Screw in Terminals for Speakers Power and Antenna or Mic. Cables
- Changing the Source, track, or volume in any zone do not affect any other zone functionality or status at all
- Ability to have and function fully from 1zone up to 1470 Zones flexibly

- MP3 File reading and Dynamic reporting directly to S-bus enables Display devices
- Ability to announce Prayers, prompts, reminders, warnings ++
- Optional Text to speech function
- Optional Audio Encoders for Door Audio/Video Intercom functions

  Why Z-Audio:
  - *Less Wiring Technology (very Environmental)*
  - *Safe and Secure life by Alerts Warnings announcement*
  - *Extreme flexibility and expandability*
  - *Built in Prayer announcement*
  - *Direct Zone Play stand alone, and Networked*
  - *Auto Detect Paging Port and Auto Override*
  - *Alerts and reminders by Voice Prompts on SD card*

VI-K- BUS Enabled SMS Communication Modules
- Can be work with any type of SIM card.
- Able to receive up to 99 Different SMS massage control to trigger different functions
- Able to send 24 Alert SMS to different Mobile Phones.
- Not case sensitive and easy to control Program.
- CID detection for SMS security control that not accepting to be controlled from stranger numbers.
- Feedback function to inform the user after the operation succeeds.
- All Terminals Are Simple Screw in Terminals
- Operates on BUS Line Voltage with Tolerance between 8VDC up to 32VDC
- Have Built in Protection & Reverse Polarity Protection
- Have LCD for easy setting.

  Why SMS Control:
  - *Safe and Secure life by Alerts Warnings messaging*
  - *Extreme distant control flexibility*
  - *2-way Control and Monitoring (Timed, Event Driven, Status Driven)*
  - *Simple and Easy and fast way of Communication command and status reporting*

VI-L- BUS Enabled TCP/IP and RS-232/485 Gateways
- Work as Network Bridge for Different Subnet ID for big projects to link each subnet ID of 255 Devices to other Subnet ID up to 255 subnet ID and conclusion of 65000 devices in one network.
- Use to link any touch screen, PC interface software, show control software, Mobile application, or Java script based remote to the bus network.
- Used as Programming port between the PC and the Bus devices
- Terminals Are Simple Screw in Terminals, and RJ45 interface
- Built on Board RS-232 and RS-485 Interface with Unlimited ASCII and Hex-Decimal Flat Strings ability and Flexibility
- Selectable Baud Rates and parity
- Operates on BUS Line Voltage with Tolerance between 8VDC up to 32VDC
- Have Built in Protection & Reverse Polarity Protection
- More than 2000 Modules can be added addressable on Single S-BUS Network

  Why TCP/IP Gateway:

- *Flexibility and Speed of Communication 2-way*
- *Integration to third party Devices*
- *Unlimited Ports and devices connectivity*

VI-M- BUS Enabled Power Meters
- 3 Phase Power meter with 3 Phase volte input and 3 of 5A Current Input to measure the electrical consumption KW/H
- Time based save and adjustable current Measuring to fit with all type of current transformer like 100/5A 200/5A …
- Bus enabled that integrated with HAC PC software that give a reading interface per hour/day/week/month with high consumption Alert.
- All Terminals Are Simple Screw in Terminals
- Operates on BUS Line Voltage with Tolerance between 8VDC up to 32VDC
- Have Built in Protection & Reverse Polarity Protection

VI-N BUS Enabled Room Partitioner
- 6 dry input NO/NC to combine or separate up to 6 rooms Panels for lights Air-condition Music curtain and Infrared.
- Have the logic to combine different scenario depend on the statues of each dry input.
- All Terminals Are Simple Screw in Terminals
- Operates on BUS Line Voltage with Tolerance between 8VDC up to 32VDC
- Have Built in Protection & Reverse Polarity Protection

VI-O BUS Enabled Curtain Motors, Drapes, and Blinds Motors
- Curtain must have free clutch, powerful adjustable motor to carry from 1KG-120KG.
- All motors must have controller and Infrared receiver with dry contact for integration.
- All motors should include the power supply and the needed rail.
- Sun bus controller (optional) to make all curtains Smart-bus Enabled.
- All controllers have the ability to change their Infrared code so that will not effects the integration if more than one motor installed in the same room.
- Curtain controller should have built in timer for 4 different time daily for automatic open and close the curtain
- All curtain should have the open close stop function
- DIY All drapes must be easy to install for any user.

VI-P BUS Enabled Door Access Panels
- RFID card reader for access control
- Automatic send signal for each time the door open to the bus network
- It have NC/NO connection for both type of Lock
- Combine with door bell touch press 3 services for hotel and backlit for Room number and 2 dry inputs for door and window magnetic sensors.
- Elegant glass panel with magnetic holder
- All Terminals Are Simple Screw in Terminals

- Operates on BUS Line Voltage with Tolerance between 8VDC up to 32VDC
- Have Built in Protection & Reverse Polarity Protection

VI-Q BUS Enabled Motor Switch Over Controllers for gates, garages ++

- 5A 4 relay to control up to 2 motors for each Module
- Protection delay for starting stopping
- Running time Program for the motor that don't have Auto stop function.
- Protection for both side direction (can not Run together in same time)
- Bypass switch for Open close Manually operation
- Free voltage Pass throw relay that suitable to connect to all type and Voltage Motors.
- All Terminals Are Simple Screw in Terminals
- Operates on BUS Line Voltage with Tolerance between 8VDC up to 32VDC
- Have Built in Protection & Reverse Polarity Protection

VI-R BUS Enabled Web Host to enable control from any web or network accessible device
This is the Web-Server system that enable control using any browser.
- The Web-server must be Small in Size, Din rail Mountable
- It Must Be BUS Enabled as well as Ethernet ready
- It Should work as Static and as Dynamic Domain Name Server
- It Must Be simple and fast with minimal Graphics for swift Loading ability
- The web-server must be compatible to be used to control all BUS enabled Systems inside that building environment using any of the WiFi enabled and Web enabled devises like:
  - I Phone
  - Google Phone or any Google Android Enabled
  - I-mate or any smart Phone
  - PSP and Play Station or X-Box
  - Any Net-book, laptop, PC, or MAC
- Must Be User name assigned and Password Enabled
- Must Accept Multi User Log in Simultaneously
- The Web-server must Be able to Display Systems Status in 2-way format
- It should be able to control all building, Group, Zone, Device, Channel as needed for the following Minimum Systems:
  - Lighting and Dimming
  - HVAC Control
  - Motorized Shades, gates and garages
  - Media Devices like TV and DVD
  - Audio Distribution and Music
  - CCTV IP cameras Vieing
  - Power Consumption
  - Security and Safety
  - Macros Driving

VI- S BUS Enabled I/O Module for valves control, temperature, water tank level, pumps++

- Has 4 Digital Input to connect to any Digital sensor NO/NC
- 2 Analog 0-10 Voltage Input to connect to any Voltage analog sensor
- 4 CH free voltage Relay output

- 2 CH Analog 0-10 V output.
- Logic and Analog 5 ranges for each Input channel.
- All Terminals Are Simple Screw in Terminals
- Operates on BUS Line Voltage with Tolerance between 8VDC up to 32VDC
- Have Built in Protection & Reverse Polarity Protection

VI-T BUS Enabled Air-Quality Detector with temp, humidity, and Other gases contents
This is a new Device That adds to the Health and Environment as well as help in Safety and Protective Maintenance.. it acts as the Nose and Skin of the system.
- The Detector Must Me Elegant, and Almost Discrete
- Must be Ceiling Mountable Directly, and Wall Mountable using special Addition
- Must Have Built in Air Temperature Sensor, and Air Humidity Sensor
- Must Have Additional Calibrate-able Sensor to be selected as one of the following:
    - Air Quality Sensor that Analyses the air content of (Methane, Hydrogen, Ethan, and CO gas)
    - LUX sensor (Light intensity)
    - Cooking Gas Leak Sensor
    - UV rays Level Sensor
- The Sensor Must Be Bus Enabled
- Must Have Built in Simple Logic
- All Terminals Are Simple Screw in Terminals
- Operates on BUS Line Voltage with Tolerance between 8VDC up to 32VDC
- Have Built in Protection & Reverse Polarity Protection

VI-U BUS Enabled RFID, or Smart Chip readers
This is And Advanced Hotel Card/Tag Holder that is used for Master Control of room Energy activation and Deactivation.
- The Reader Must Be smart and Accept only Valid Guest Card
- It Must have Delay Cut Off Timer
- It Should Accept RFID cards or Smart Cards with Chip
- Should Be Totally Bus Enabled
- All Terminals Are Simple Screw in Terminals
- Operates on BUS Line Voltage with Tolerance between 8VDC up to 32VDC
- Have Built in Protection & Reverse Polarity Protection

VI-V BUS Enabled Third Party Interfaces like: Dali, KNX, RS-232, RS-485, FTP, OPC ++
- To be fully integrated to 3rd party system and converted to the Smart-Bus Protocol and vice versa
- KNX Converter should give the ability to control any KNX devices from the DDP and Smart-Bus panel logic, SMS and other controlling Devices, and it can give the ability for any KNX panel to control any smart-bus devices
- Dali is ready with DALI Protocol to dim all DALI florescent lights from Smart-Bus devices
- RS232 full 2 way ASCII and HEX control that can send 99 commands each of 20 string for both ASCII and HEX with or without CR and LF
- FTP streaming Ability to connect to Media Servers, NAS ..etc.
- It Must Have OPC Server Connectivity to integrate to third Party Systems for BMS

- All Terminals Are Simple Screw in Terminals
- Operates on BUS Line Voltage with Tolerance between 8VDC up to 32VDC
- Have Built in Protection & Reverse Polarity Protection

VI-W BUS Enabled Logic and Timer Module.
- Should has 240 logic table with AND,OR NAND, NOR and 4 line of programming for each table with linking between tables ability
- 4800 control command with 255 Programmable flags
- Sunset sunrise DTS and Muslim Prayers ready calculation for more than 300 different cities.
- Support all events conditions, Timer, and others conditions from the bus network.
- Have built in Timer
- All Terminals Are Simple Screw in Terminals
- Operates on BUS Line Voltage with Tolerance between 8VDC up to 32VDC
- Have Built in Protection & Reverse Polarity Protection

VI-X BUS Enabled Show Control
- To set the PC as part of the bus network with subnet and ID address to be able to be controlled from the bus system.
- Can run any Film, Picture , Flash , File on the PC
- Can combine between the films and different action on the Bus network depend on Time line.
- Have stop command function to be run when the user stop its presentation directly.

VI-Y System Ability to Stream, Monitor and control Video Contents
- Can stream any Films from the server and send it to Play it on TV.
- Can send any Film to any TV and with Pausing or added to the List.
- Can monitor other Room watched Films.
- Can see the Genres and brief of Film and preview it before send it to TV.
- Can stream Online TV from Internet.

VI-Z- System Ability to Control Media Lifters and Presentation Switchers
- The System Must be Protocol ready to connect to The following Types of Motors
  - Plasma Screen Lift
  - LCD Screen Table Lift
  - Flat Screen Rotators
  - Flat Screen Swing down Lifts
  - Projector Lifters
- The System Must be Protocol enabled to Connect Direct to Media and Presentation Switchers, HDMI presenters and Matrix…etc.

VI-AA- System Ability to Monitor Current and Operation Status of Systems
- Ability to monitor Current and Judge Operational Status of Equipment

- Ability to Report and Logically Control different equipment based on Current and Consumption level and status
- All Terminals Are Simple Screw in Terminals
- Operates on BUS Line Voltage with Tolerance between 8VDC up to 32VDC
- Have Built in Protection & Reverse Polarity Protection

V-BB- System Ability to Operate and Read Long range RFID Tags as far as 20-50 meters
- The System Must be Protocol ready to connect to Extra Long range RFID readers
- Integrated to Bus to do the full scenario when Arrival time for all bus devices
- Can be Directional or 360 degree Reader.
- Detection Range Adjustable to fir the Area space
- Read Tags, Cards as Optionally Selectable (Active or Passive)
- Reading Distance range vary from 5 Meters up to 50 meters

VI-CC System Ability to Connect CCTV cameras, Visitor Video Intercom, and Room to Room intercoms
- Can connect and monitor all analog and Digital CCTV
- Start recording and take snap shots depend on events.
- Can talk room to room and record memo massages
- Have touch Video intercom with Picture saving ability and seeing up to 4 other CCTV in one screen

VI-DD Availability of Hand Held Remote controls
- Elegant small remote Control with LCD.
- Can be used with all Wall panels, DDP, 8in1 sensor. 10in1 sensor, Touch screen
- Can trigger different scenario and Dimming
- Have single press and keep pressing function.

VI-EE Availability of Different Compatible Mobile Tablets, and Touch screen Control Devices
- Wireless 10" touch screen with docking table Charger or wall stand Charger
- Android SW
- Windows CE SW
- Show Control SW
- Hotel GRMS SW
- Iphone and Ipad Apps.
- Windows XP/7 SW