



S-WAVE CATALOGUE
THE BEST CHOICE FOR HOME AUTOMATION





Simple connect Simple Life



What is S-wave?

S-wave is a new generation home automation wireless Mesh technology that enables the Direct conversion of the Smart-Bus Automation products to connect with each other wirelessly.

S-wave is designed to be simple to use, affordable and to offer Retrofit high quality products with flexible functionality.

S-wave is the device you can connect to the wired Smart-Bus.

products and to Trail Click mini modules to make them work wirelessly in an interactive mesh environment.

This new technology brings the needed: Luxurious, reliable, affordable and swiftly implementable automation to your door Step.

S-wave advantages:

Easy Installation

No need for new wiring – Smart-Wave devices communicate with each other by creating wireless mesh 2-way communication Network across all devices.

Easy Configuration

Both Smart-Bus and Smart-Wave devices don't need to be 'enrolled' into the network/each device has a unique ID number - they join the network as soon as they're powered up.

Fast

No delays – Smart-Bus messages get through in less than 0.05 seconds. Activate Smart-Bus compatible controller and the lights turn on instantly.

Plug and Play

The S-wave Modules gets activated Directly on Plugin within less than 2 Seconds then start communicating with each other.

Smart

S-wave makes your life easier. More Luxurious and comfortable, Saves Energy and Add value to your Investment

Affordable

Smart-Bus is one of the most price competitive luxury home automation technologies ever known.





S-Mesh Power

The Vision To Simplify Automation Need made it easy and Ready to find Direct Plug and Play Product under one environment to cater and Handle all your Needs without the need for integration, scripting nor complex programming. Life is made easy again thanks to Smart-Technology. The Smart-Mesh give complete Integrated Solutions for the following and More: Lighting, Dimming, Scenes, Fan Speed, Air-conditioning control, Irrigation and Pumps control, Gates and garages controls, Video intercom, CCTV cameras, Security, Motorized Drapes control, Energy saving and energy and utilities metering, Appliance control, Audio Distribution and Media Control, Water Leakage, tank status, weather, SIP Telephony and Video intercom among many More.



| CABLES | |
|--------|--------|
| | S-BUS |
| | S-Wave |



| CABLES | |
|--------|----------------|
| | S-BUS |
| | S-Wave |
| | S-Bus Products |

Where To Use?

A: Linking Between Floors If Cabling Not Possible



S-Bus Wired Network, with S-Wave Wireless Links

B: Linking Between Floors and rooms in total Wireless S-Mesh Environment



S-Wave Pure Wireless Network

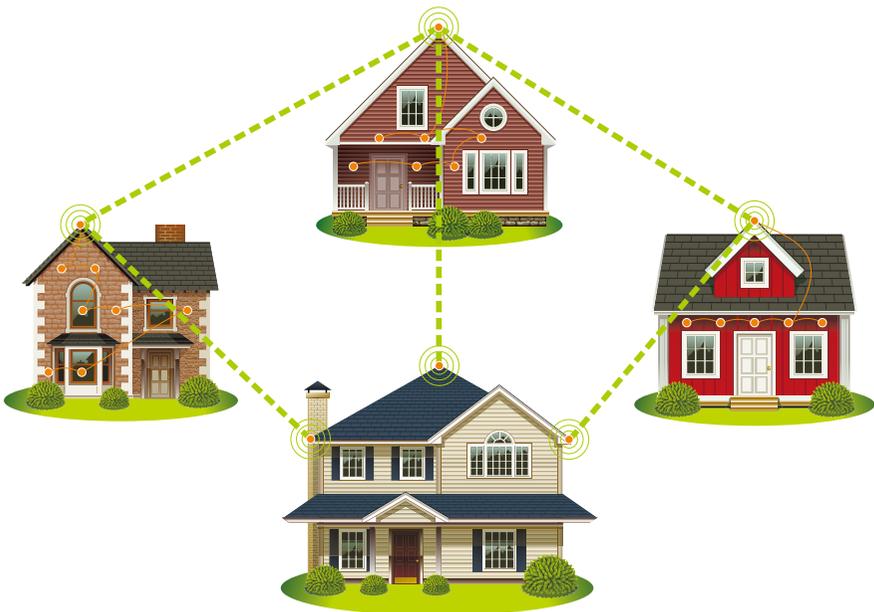


CABLES

- S-Wave
- S-Bus Products

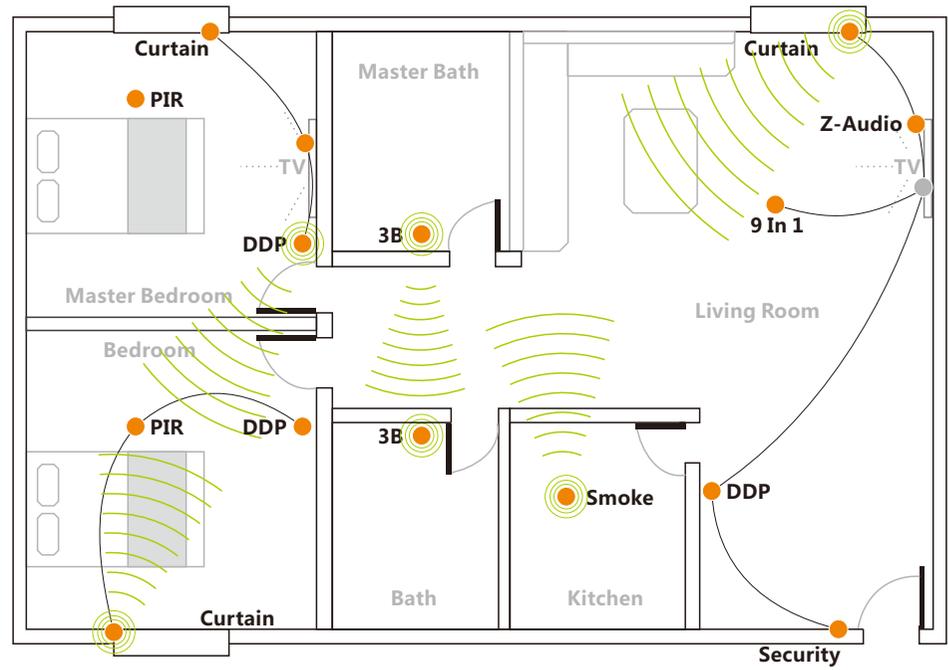
Where To Use?

C: Connecting Between Buildings



Building To Building

D: For Semi-Retrofit Installation



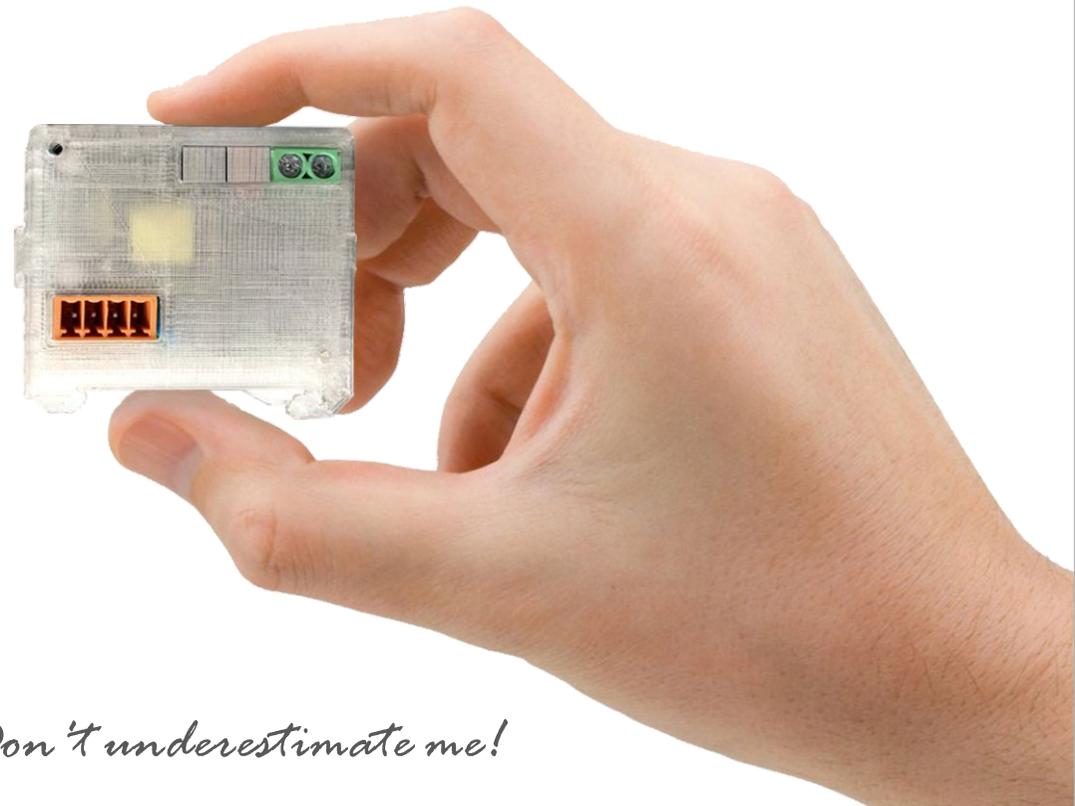
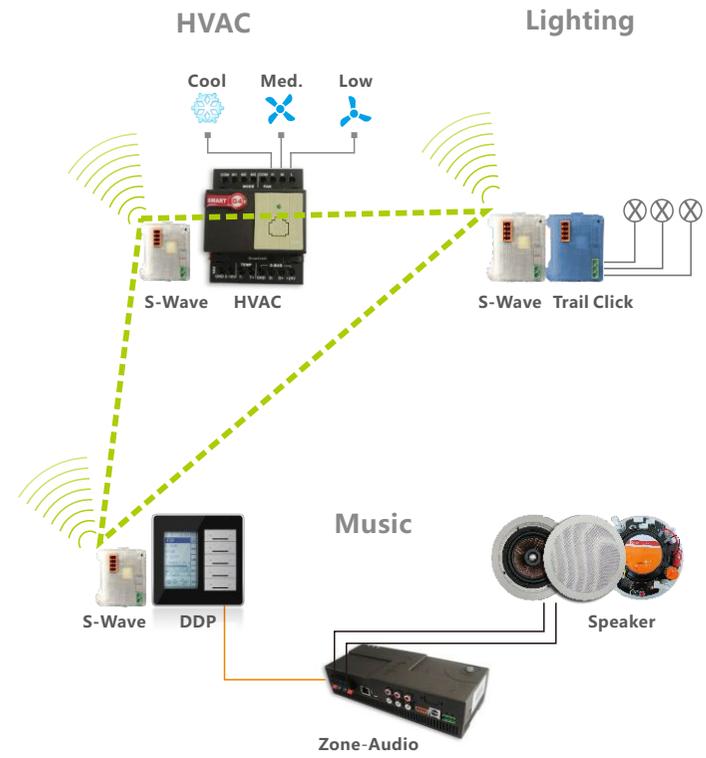
Room To Room



| CABLES | |
|--------|--------|
| | S-BUS |
| | S-Wave |

Where To Use?

D: Pure Retro Fit Installation

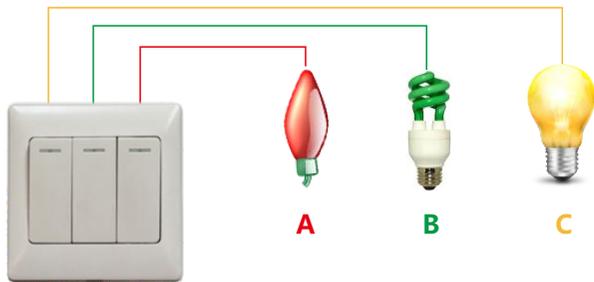


Don't underestimate me!



Changing a light switch to become wireless S-Wave Retro

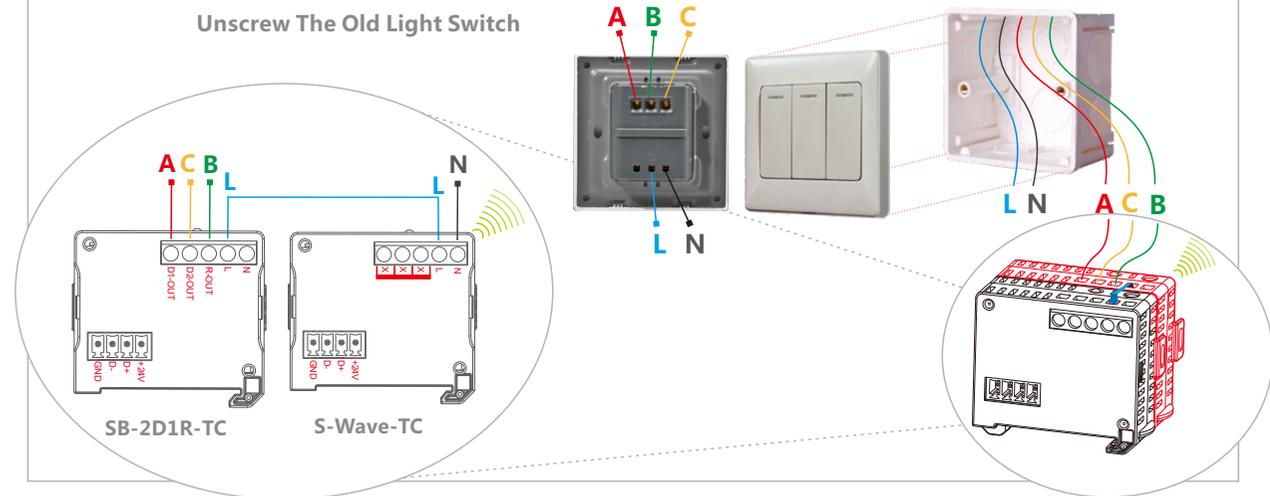
Step 1



Existing Light Switch Assembly

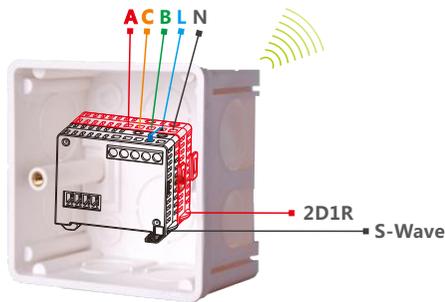
Step 2

Unscrew The Old Light Switch



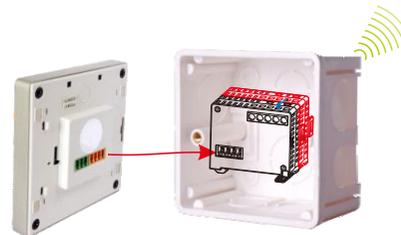
Re-connect Wires Into Matching Ports Of S-wave And Trail Click Retrofit Modules

Step 3



Push the Connected TC modules into wall back Box

Step 4



Push to Plug The DDP into the TC Connector

Step 5



Converted Smart Product



Going Wifi and 3G





Saving Wastage In Bathrooms (Energy + Water)



If No Motion For > X Minutes = Then Switch off light & power to close water valve solenoid
(Default 20 minutes)



S-Wave & Trail Click New Added Modules List

There are Today 8 new Modules added as S-wave and trail Click that Plug into any of the 129 Other S-BUS Products in compatible complete S-Mesh environment.

| Picture | Name | Model | Description | Specs | Usage |
|---------|-----------------------------------|----------------|--|---|---|
| 1 | S-Wave Trail Click | SB-SWave-TC | Wireless 2-Way S-Mesh Enabled Module with Built in Power Supply & 2-Zone Security Inputs And with Temperature Sensor Built in Micro Time Clock | Power supply Input: 80-230VAC, Output 24VDC / 630mA | Wireless s Connectivity Mesh, Power Supply for S-BUS and Trail Click Products, Security Sensors Temperature and Air Quality micro climate |
| 2 | 2Dimmer+1Relay Trail Click | SB-2D1R-TC | 2Channel Dimmer and 1 Channel Relay Module S-BUS Enabled | 2 Channel Dimmer Each 1A, 1 Channel relay 5A | Lighting Control, Scenes, Sequence, Exhaust fan Control |
| 3 | 1Dimmer+1Relay Trail Click | SB-1D1R-TC | 1 Channel Dimmer and 1 Channel Relay Module S-BUS Enabled | 1 Channel Dimmer 1A, 1 Channel relay 5A | Lighting Control, Scenes, Sequence, Exhaust fan Control |
| 4 | 1Dimmer+ 1Relay+ 1Fan Trail Click | SB-1D1R1F-TC | 1Channel Dimmer and 1 Channel Relay and 1 Channel Ceiling Fan Sped Module S-BUS Enabled | 1 Channel Dimmer 1A, 1 Channel relay 5A 1 channel Fan Speed 4 Speed | Lighting Control, Scenes, Sequence, Exhaust fan Control, Ceiling Fan Multi Speed control |
| 5 | HVAC Module | SB-HVAC-TC | Air-Conditioning Module | AC Control with 2 fan Speed | Air-conditioning, Ventilation, and Heating control and temperature sensor |
| 6 | 2Relay Trail Click | SB-2R-TC | 2 Channel Relay Module S-BUS Enabled with Switch over Motor Function | 2 Channel relay 5A Each With Double throw Grouping | Lighting, Motorized Drapes, Sprinkler System, gate Control, Lock release, small Appliances control |
| 7 | 3Relay Trail Click | SB-3R-TC | 3 Channel Relay Module S-BUS Enabled with Switch over Motor Function | 3 Channel relay 5A Each With Double throw Grouping | Lighting, Motorized Drapes, Sprinkler System, gate Control, Lock release, small Appliances control |
| 8 | S-Wave Impulse Meter Trail Click | SB-SWave-IM-TC | Impulse Meter Ready Swave module, S-Bus enabled | Wireless Impulse Meter module for Power, Water GAS, Diesel Metering | Sensors Input, Security, Water Leakage, Tank Level |

Special Common Features

All Trail Click Modules are equipped with Broadcast Button, S-USB Firmware Upgrade Port, S-connector Plug Port, Easy Find Smart-Scan as well as Easy ^Hand Pairing auto Populate Function.



S-Wave Models

There are 3 Models for S-wave That Vary In the following features

| Features | SB-SWave-TC | SB-Swave2-TC |
|--|-----------------------------------|----------------------------------|
| Frequency Band Selection | 433-915MHz ISM bands | 433-915MHz ISM bands |
| Range LOS | 100-1000 Meters | 200-2000 Meters |
| Data Rate | 0.1-256 Kbps | 0.1-256 Kbps |
| Output power range | +20 dBm Max | +30 dBm Max |
| StandBy | Ultra low power shutdown mode | Ultra low power shutdown mode |
| Power Consumption | 18.5 mA receive 85 mA transmit | 25 mA receive 550 mA transmit |
| Auto-frequency calibration (AFC) | Yes | Yes |
| Power-on-reset (POR) | Yes | Yes |
| TX and RX 64 byte FIFOs | Yes | Yes |
| Temperature sensor | -40 to +85 °C temperature range | -40 to +85 °C temperature range |
| Compliance | FCC, ETSI | FCC, ETSI |
| Digital receiver Tech. | ADC and DSP | ADC and DSP |
| Added Zone Dry Inputs | 2-Zone | 2-Zone |
| Master/Slave Time clock Sync. Function | Yes | Yes |
| Built in Altimeter and Barometer | Yes | Yes |

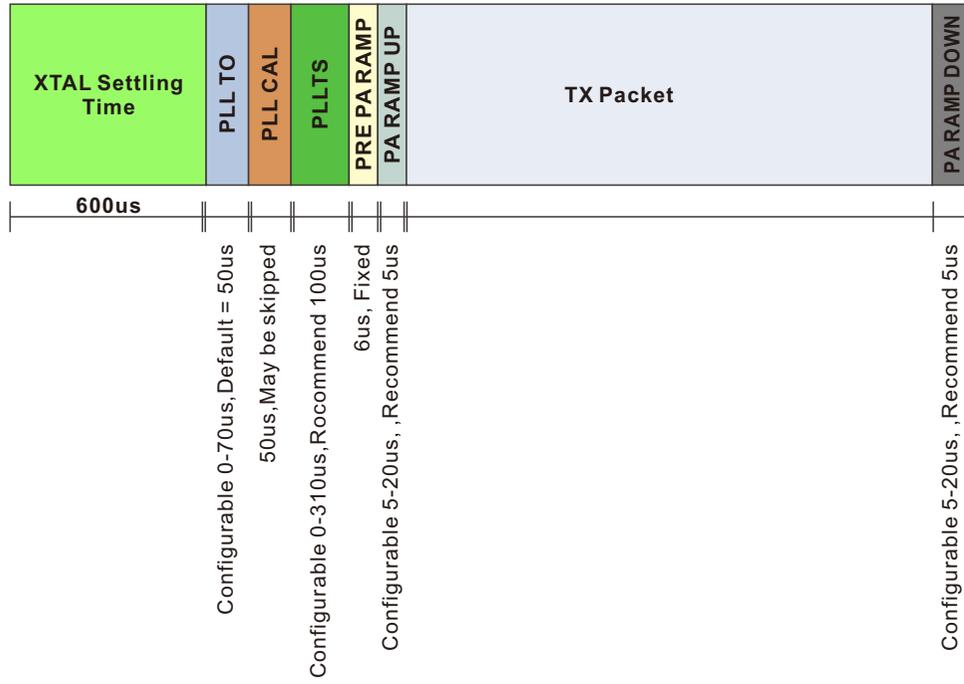


Figure 8.TX Timing

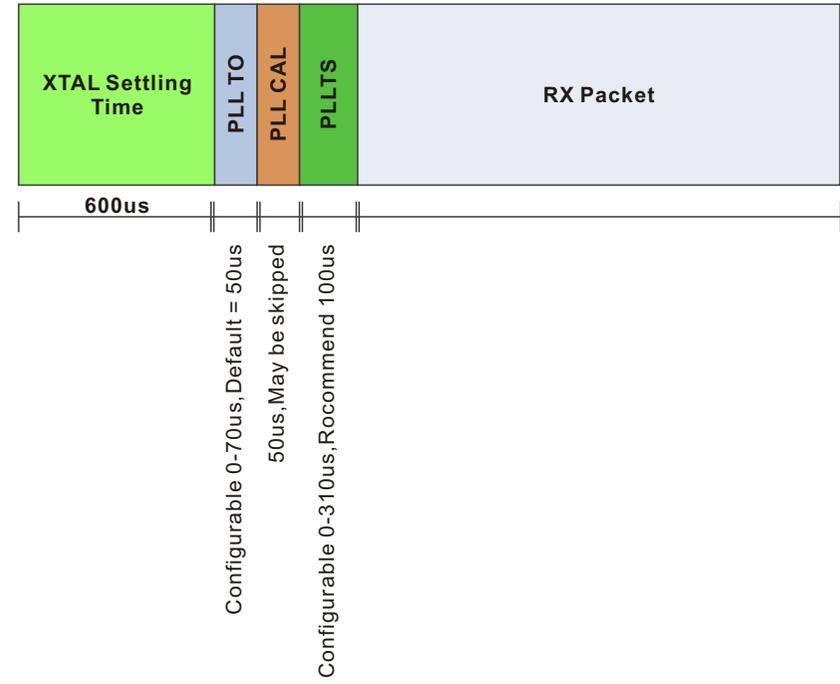


Figure 9.RX Timing

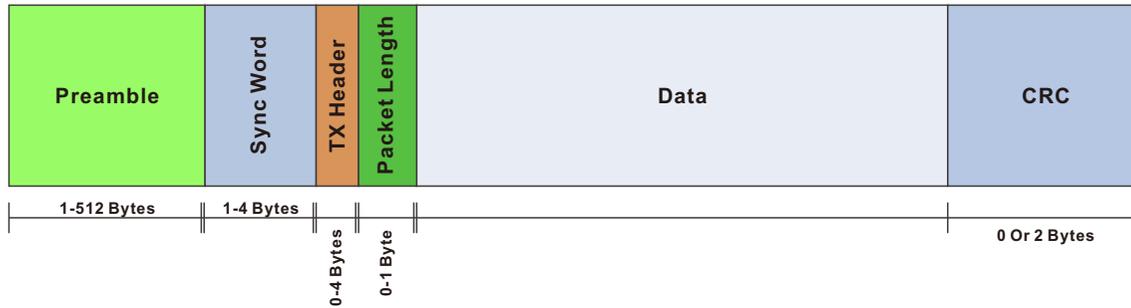


Figure 18. Packet Structure

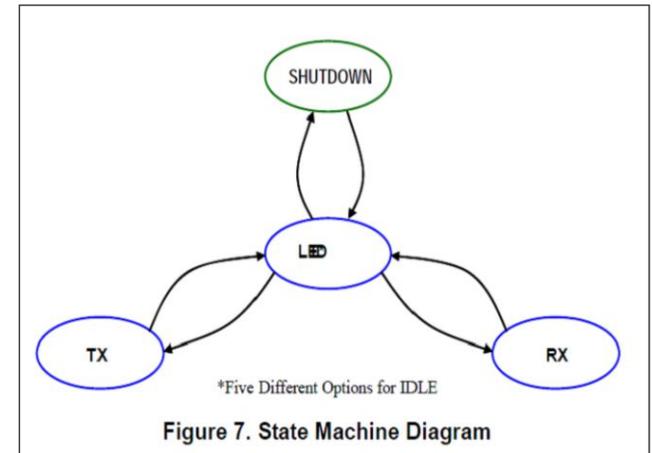


Figure 7. State Machine Diagram

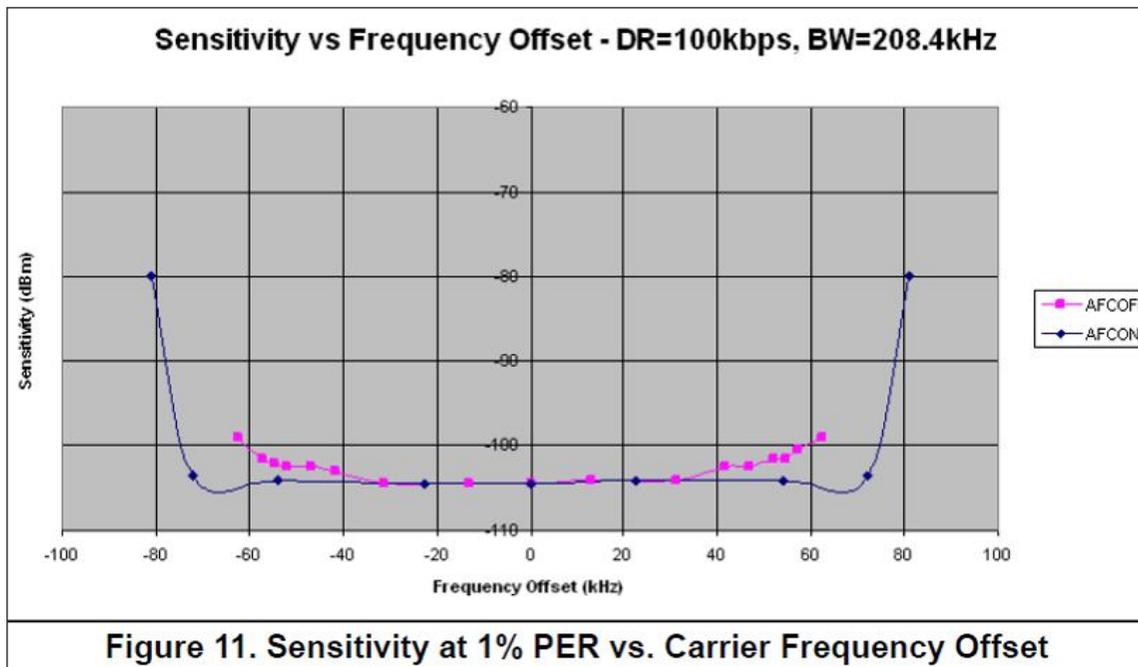


Figure 11. Sensitivity at 1% PER vs. Carrier Frequency Offset

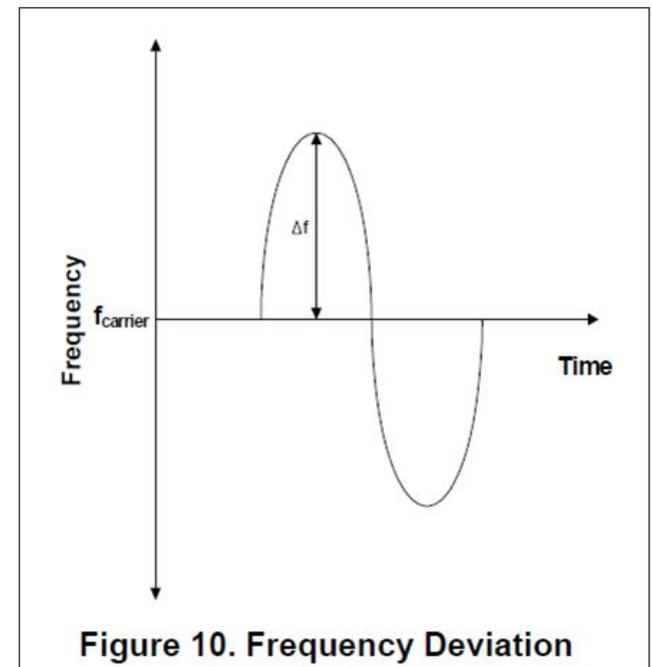
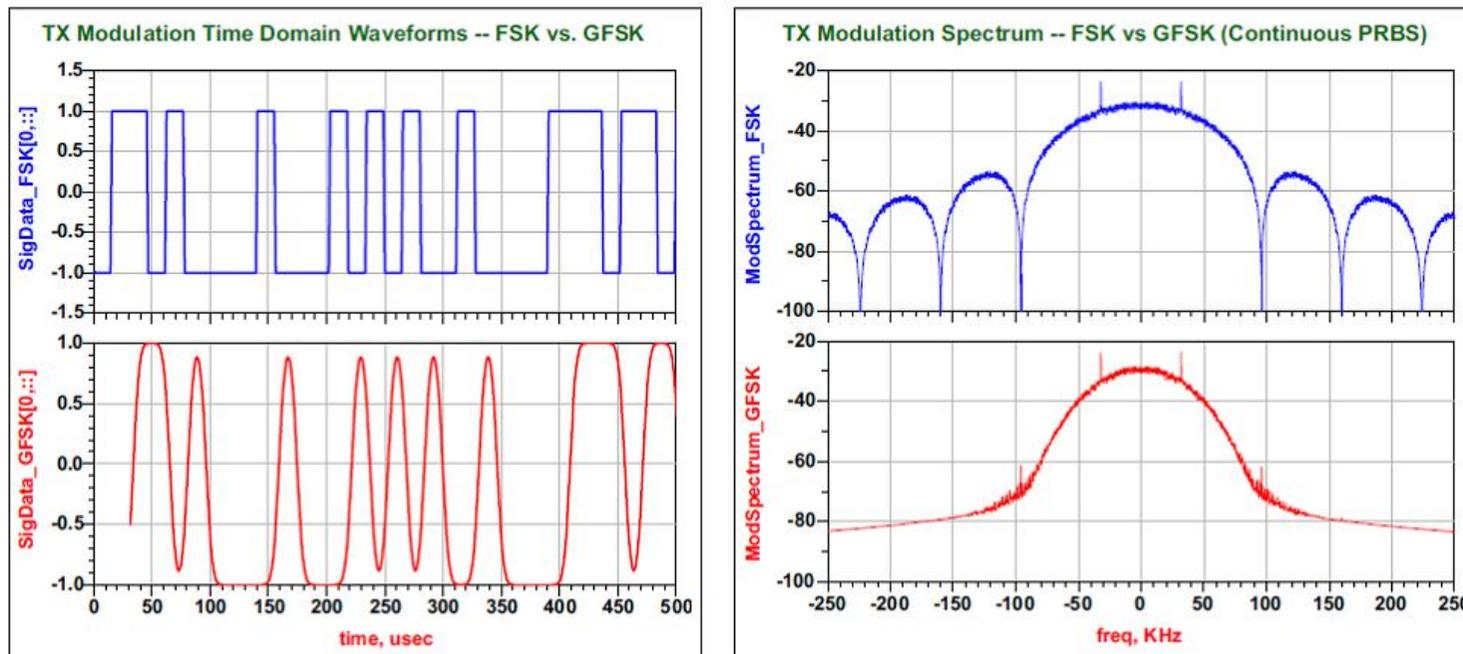


Figure 10. Frequency Deviation

| modtyp[1:0] | Modulation Source |
|-------------|--|
| 00 | Unmodulated Carrier |
| 01 | OOK |
| 10 | FSK |
| 11 | GFSK (enable TX Data CLK when direct mode is used) |



| DataRate | TxDev | BT_Filter | ModIndex |
|----------|---------|-----------|----------|
| 64000.0 | 32000.0 | 0.5 | 1.0 |

Figure 12. FSK vs GFSK Spectrums

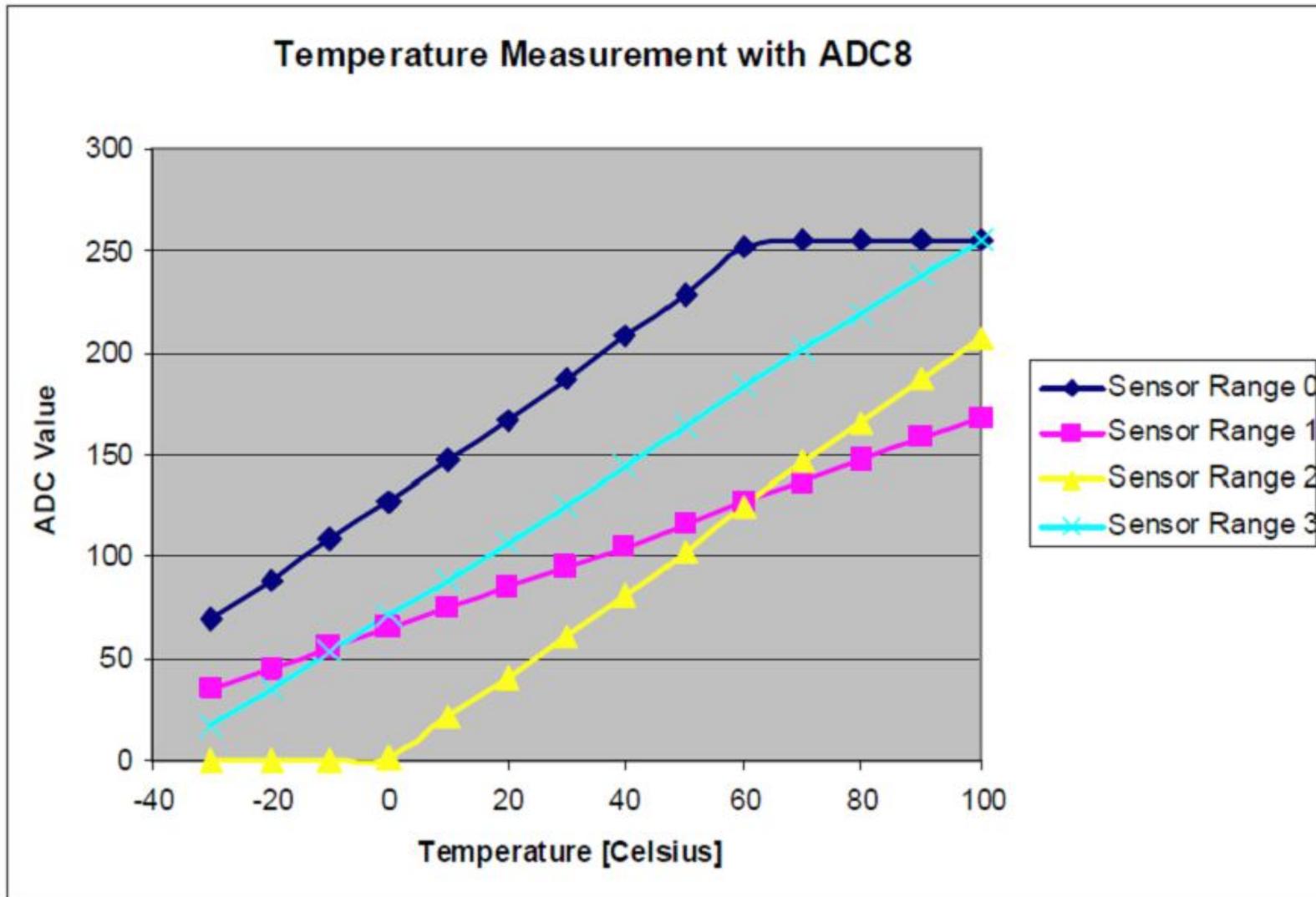


Figure 28. Temperature Ranges using ADC8



S-Wave Compatibility

S-Wave is Compatible with All Smart-BUS G4, G4s Products. Also it is compatible with Most S-BUS G2 and G3 as well.
S-Wave is Compatible with Smart-Hotel and Smart-Home Products and Applications for Mass Units



Do it in the next week Monday
(need Sunny's files)

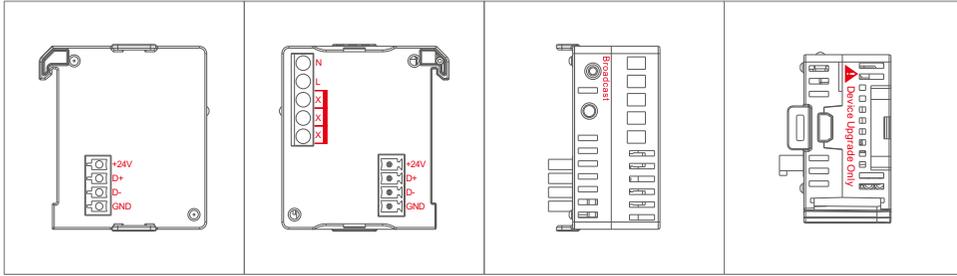


Technology Comparison Table

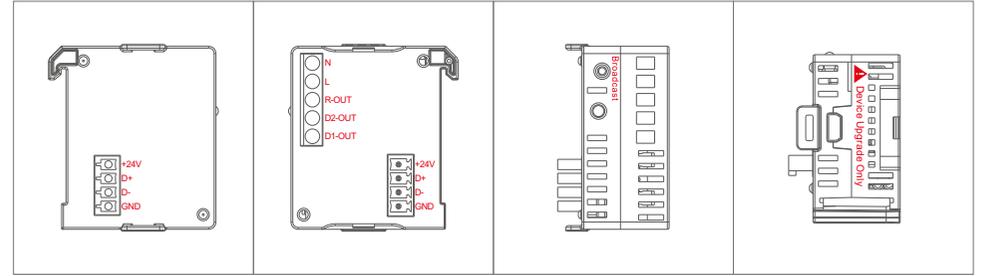
| Technology |  Z-Wave |  LightwaveRF |  INSTEON |  Zigbee |  S-Wave |
|--|--|---|---|--|--|
| Wireless Frequency (EU) | 868.42MHz | 433.92MHz | 869.85MHz | 868 or 915 or 2.4 | 433.92MHz -915MHz ISM bands |
| Mesh Network |  |  |  |  |  |
| Powerline (via mains wiring) |  |  |  |  |  |
| Maximum number of devices | 232 per controller | 8 per room (total 64) | 400 per controller | 200 devices | 256 per Subnet X 256 Subnets |
| proprietary wireless communications protocol |  |  |  |  |  |
| Open Standard Protocol |  |  |  |  |  |
| Maximum Range | 50m (outdoors) - 30m (indoors) | 15m (indoors) | 50m (outdoors) - 30m (indoors) | 1500m (outdoors) - 10-75m (indoors) | 500m-2000m (outdoors) - 30m -200m(indoors) |
| Two-way communication |  |  |  |  |  |
| Device Types | Controllers, Slaves & Routing Slaves | Controllers & Slaves | Peers - all act as Controller and Slaves | Peers - all act as Controller and Slaves | Peers - all act as Controller and Slaves |
| Insert Modules | Relay & Dimmers | Relay only | Relay & Dimmers | Relay & Dimmers | Relay & Dimmers , HVAC, Sensors, Meters, Ceiling Fan Speed |
| Adjustable Frequency |  |  |  |  |  |
| Adjustable Range |  |  |  |  |  |
| Connects Both Wired and Wireless Communication between Devices |  |  |  |  |  |



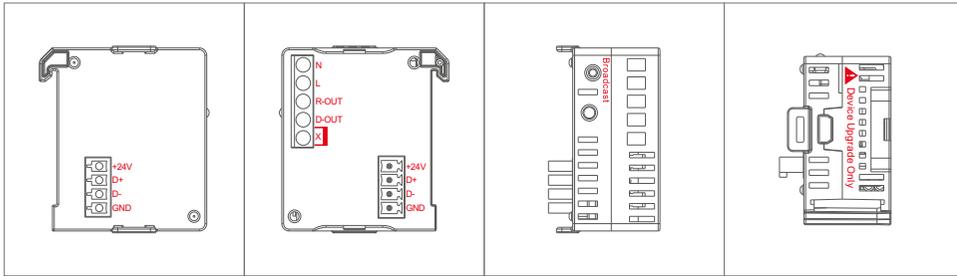
The silk Screen



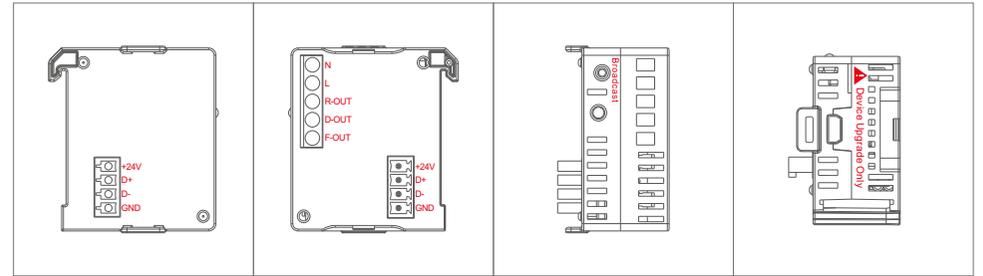
S-Wave



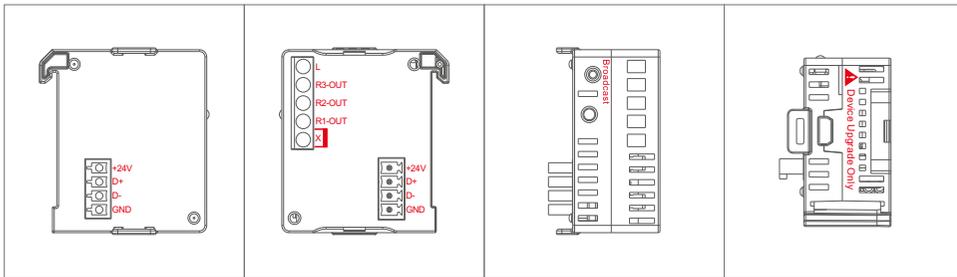
2D+1R



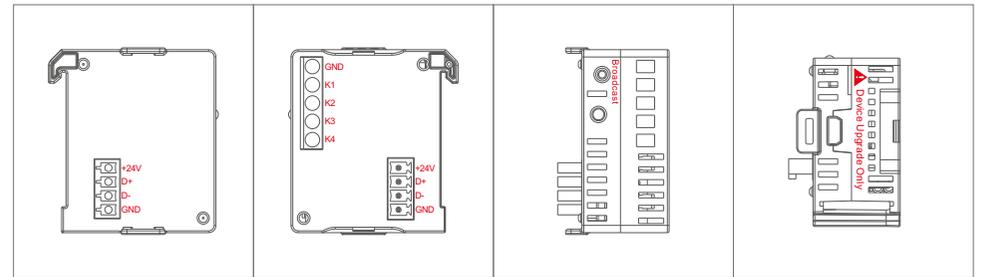
1D+1R



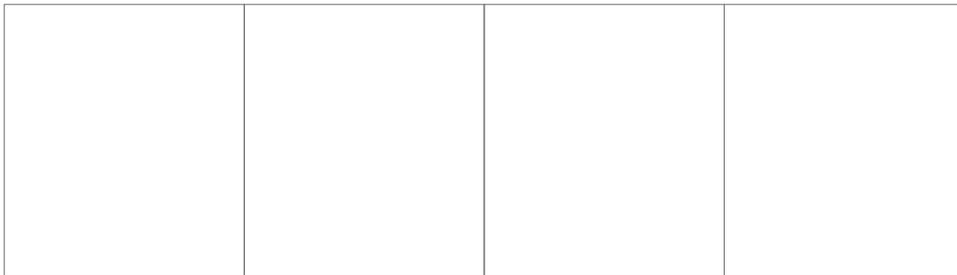
1F+1R+1D



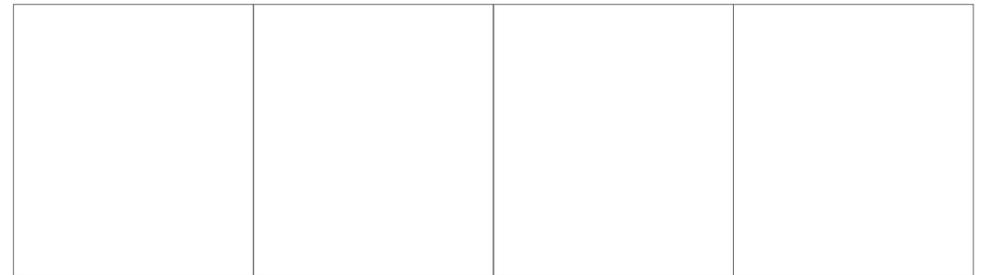
3R



4Z



?????



?????



S-Wave Sample Title

Dear Boss need you make title to here

| | | | | | |
|--|--|--|---|---------------------------------|---|
|  <p>Bedroom</p> | <p>SB-1D1R-TC } OR SB-2D1R-TC } Lighting / Dimming OR SB-2R-TC } OR SB-3R-TC } Lighting OR SB-1D1R1F-TC } Lighting Dimming Fan</p> | <p>+ SB-HAVC-TC Temperature</p> | <p>+ SBW-SWAVE-TC Wireless / Power / Security</p> | <p>+ DDPs (Recommended)</p> | <p>} PIR Lux Sensor IR Emitter IR Eye Clapper Control</p> |
|  <p>Living Room / Hall</p> | <p>SB-1D1R-TC } OR SB-2D1R-TC } Lighting / Dimming OR SB-2R-TC } OR SB-3R-TC } Lighting OR SB-1D1R1F-TC } Lighting Dimming Fan</p> | <p>+ SB-HAVC-TC Temperature</p> | <p>+ SBW-SWAVE-TC Wireless / Power / Security</p> | <p>+ DDPs (Recommended)</p> | <p>} PIR Lux Sensor IR Emitter IR Eye Clapper Control</p> |
|  <p>Kitchen</p> | <p>SB-1D1R1F-TC Lighting / Dimming / Fan</p> | <p>+ SBW-SWAVE-TC Wireless / Power</p> | <p>+ Any Wall Panel / Switch S-Bus Normal</p> | | |
|  <p>Bathroom</p> | <p>SB-1D1R1F-TC Lighting / Dimming / Fan</p> | <p>+ SBW-SWAVE-TC Wireless / Power</p> | <p>+ Any Wall Panel / Switch S-Bus Normal</p> | | |



S-Wave Sample Title

Dear Boss need you make title to here



Audio + iPhone

SB- Zone Audio
Z-Audio Power Supply
SD Card
Speakers →  Wifi + **SBW-SWAVE-TC**
Wireless / Power



TV

SB-IRMacro-FL + **SBW-SWAVE-TC**
Wireless / Power



IP Gate

SBW-IPL-DN }
RSIP
Swave
DNS
Logic
Time Clock
3Z
Security Password



Balcony

2R + SWave
Magnetic Contact



Bell / Access

SB-BellXS-WL + **SBW-SWAVE-TC**
Wireless / Power