PAN26 Smart Switch Box User Manual

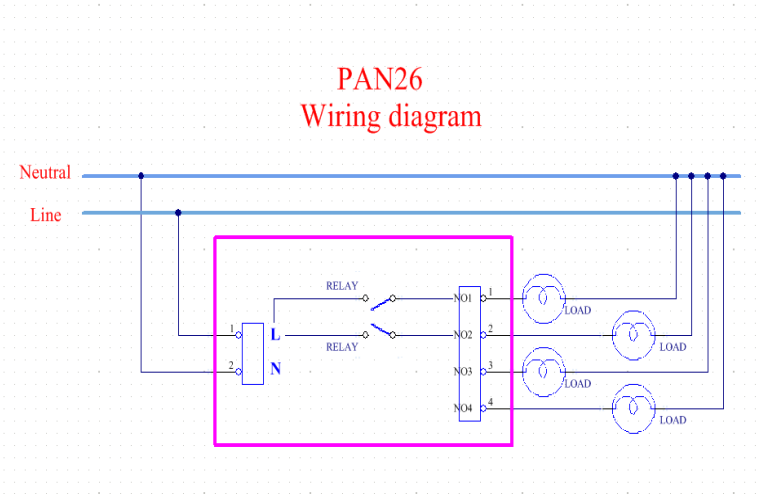

Figure 1

The smart switch box is a Z-Wave™ enabled wireless device fully compatible with any Z-Wave™ enabled networks. This device is a security enabled Z-Wave Plus product that uses encrypted Z-Wave Plus messages to communicate to other security enabled Z-Wave Plus products. Z-Wave™ enabled devices displaying the Z-Wave™ logo can also be used with this device regardless of the manufacturer, and this device can also be used in other manufacturer's Z-Wave™ enabled networks. This device must be used in conjunction with a Security Enabled Z-Wave Controller in order to fully utilize all functions. Inclusion of this unit on other manufacturer's Wireless Controller menu allows remote operation of the unit and connected load.

Remote control of Dimmer/Relay modules are possible with other manufacturer's wireless Controller as well. PAN26 is designed to act as a repeater. Repeaters will re-transmit the RF signal to ensure that the signal is received by its intended destination by routing the signal around obstacles and radio dead spots. Its functionality and supported command classes are identical when included as a secure and non-secure device.

Adding to Z-Wave™ Network

In the front case, there are nine touch screen buttons with LED light indicators which are used to turn switches on and off, or carry out inclusion, exclusion, and reset.

The table below provides an operation summary of basic Z-Wave functions. Please refer to the instructions of your Z-Wave™ Certificated Primary Controller to access the Set-up function, and to Add/Remove/Associate Devices

Function	Description	Annotation
Add	1.Set your Z-Wave controller into inclusion mode by following the instructions provided by the controller manufacturer.	2.The green LED ⑤ will light on when every pressing and light off when every releasing. User should check LED ⑤ whether it accepted the pressing or not. Surround Blue LED light will flash one time when enter include mode. 3.If included successfully, Surround Blue LED light will flash one time again.
	2. Press the middle button (button ⑤) three times within 2 seconds intervals and device will enter inclusion mode.	
	3. Node ID is included.	
Remove	1.Put your Z-Wave controller into exclusion mode by following the instructions provided by the Controller manufacturer.	2.The green LED ⑤ will light on when every pressing and light off when every releasing. User should check LED ⑤ whether it accepted the pressing or not. Surround Blue LED light will flash one time when enter exclude mode.
	2. Press the middle button (button ⑤) three times within 2 seconds will enter exclusion mode.	
	3. Node ID will get excluded.	
Reset	1.Press the middle button (button ⑤) four times and hold the button on the 4th time for about 3~10 seconds, then release button.	Use this procedure only in the event that the primary controller looses connection. The green LED ⑤ will light on when every pressing and light off when every releasing. User should check LED ⑤ whether it accepted the pressing or not. Surround Blue LED will light on at the 4th pressing and 5 seconds later light off. If reset successfully, Surround Blue LED light will flash one time.
	2.IDs will get excluded and all settings will be reset.	
SmartStart	1. SmartStart enabled products can be added into a Z-Wave network by scanning the Z-Wave QR Code on the product, with a controller providing SmartStart inclusion. No further action is required and the SmartStart product will be added automatically to the closest network within 10 minutes of being switched on in the network vicinity.	

	2. The product has a DSK string. For example : 44092-23875-12431-52375-41125-14558-37629-65457 User can find QR Code and DSK string on our product package and product.	
Association	1. The PAN26 is an always listening Z-Wave device, so associations be added or removed by a controller at any time. Or If your controller requires to have the PAN26 send a 'node information frame' or NIF for associations, pressing the middle button (button ⑤) three times within 2 seconds will cause the PAN26 to send its NIF.	The green LED ⑤ will light on when every pressing and light off when every releasing. User should check LED ⑤ whether it accepted the pressing or not.
	2. There are 9 groups for the switch	
※Adding a node ID assigned by Z-Wave Controller means inclusion. Removing a node ID assigned by Z-Wave Controller means exclusion. ※Either failure or success when including/excluding, the node ID can be viewed from the Z-Wave Controller.		

LED light Indication

To distinguish which module is in use, you can view the LED light for identification.

State Type	LED Indication
Relay module	The LED ① or ⑦ will change color from blue to green when the corresponding relay module 1 or 2 turns on. Conversely, it will change color from green to blue when relay module 1 or 2 turns off.
Dimmer module	The LED ③ or ⑨ will change color from blue to green when the corresponding dimmer module 3 or 4 turns on. Conversely, it will change color from green to blue when the corresponding dimmer module 3 or 4 turns off.
Smart button	Whenever the smart button ②、④、⑥ or ⑧ is triggered by one short pressing and the related green LED will light on one time. Whenever the smart button ②、④、⑥ or ⑧ is triggered by two short pressing, the related green LED will light on two times. User should check the related green LED whether it accepted the pressing or not.

Choosing a Suitable Location for Installation

1. The suitable room temperature for the Switch is between 0°C~40°C.
2. Do not place the Switch near combustible substances or any source of heat, e.g. fires, radiators, boiler etc.
3. After bringing into use, the Switch case shell might become a hot, this

phenomenon is normal.

Installation and Operation

1. Connect PAN26 into a plug near the relay/dimmer to be controlled.
2. Connect the load to the PNA26 module. Make sure the load to be controlled doesn't exceed 10A (Resistive Load). Please note that the loads attached to NO.3 and NO.4 should be dimmable LED because it is controlled by dimmer module. The wire connection please refer to Figure1 in the first page.
3. Toggle the button switch on the load to the ON position and it will show green light.
4. To manually turn ON the module, short press the ① 、③ 、⑦ or ⑨ button. The green LED light will turn ON.
5. To manually turn OFF the module, short press the ① 、③ 、⑦ or ⑨ button. The blue LED light will turn ON and the load connected to the module will also be turned OFF.
6. The ② 、 ④ 、 ⑥ and ⑧ buttons are smart buttons which can send central scene command to group 1 and Basic_Set command to group 3、5、6 or 8.

Programming

1. Controlling relay module by Z-Wave command

The relay module will respond to BASIC_SET and BINARY SWITCH_SET commands that are encapsulated by Multi Channel Command Encapsulation command.

1-1 BASIC_SET/SWITCH_BINARY_SET

The relay module will switch its On/Off state when controlled by the Controller.

For example :

On : [Command Class COMMAND CLASS MULTI CHANNEL, MULTI CHANNEL CMD ENCAP, Source endpoint = 0x00, Destination endpoint = 0x06, (or 0x01) Command Class = COMMAND_CLASS_BASIC, Command = BASIC_SET, Value = 0x63]
Off : [Command Class COMMAND CLASS MULTI CHANNEL, MULTI CHANNEL CMD ENCAP, Source endpoint = 0x00, Destination endpoint = 0x06, (or 0x01) Command Class = COMMAND_CLASS_BASIC, Command = BASIC_SET, Value = 0x00]

On : [Command Class COMMAND CLASS MULTI CHANNEL, MULTI CHANNEL CMD ENCAP, Source endpoint = 0x00, Destination endpoint = 0x06, (or 0x01) Command Class = COMMAND_CLASS_SWITCH_BINARY, Command = SWITCH_BINARY_SET, Value = 0xFF]
Off : [Command Class COMMAND CLASS MULTI CHANNEL, MULTI CHANNEL

CMD ENCAP,
Source endpoint = 0x00,
Destination endpoint = 0x06, (or 0x01)
Command Class = COMMAND_CLASS_SWITCH_BINARY,
Command = SWITCH_BINARY_SET,
Value = 0x00]

1-2 BASIC_GET

The Switch will report its On/Off state of the inquired endpoint to the Controller.

For example :

Basic Get Command : [Command Class COMMAND CLASS MULTI CHANNEL, MULTI CHANNEL CMD ENCAP,
Source endpoint = 0x00,
Destination endpoint = 0x01, (or 0x06)
Command Class = COMMAND_CLASS_BASIC,
Command = BASIC_GET]

Basic Report Command : [Command Class COMMAND CLASS MULTI CHANNEL, MULTI CHANNEL CMD ENCAP,
Source endpoint = 0x01, (or 0x06)
Destination endpoint = 0x00,
Command Class = COMMAND_CLASS_BASIC,
Command = BASIC_REPORT,
Value = 0x00 or 0xFF]

2. Controlling dimmer module by Z-Wave command

The dimmer will respond to BASIC_SET and MULTILEVEL_SWITCH_SET commands that are encapsulated by Multi Channel Command Encapsulation command.

2-1 BASIC_SET / MULTILEVEL_SWITCH_SET

The dimmer module will change their level when it is controlled by the Controller.

For example :

On : [Command Class COMMAND CLASS MULTI CHANNEL, MULTI CHANNEL CMD ENCAP,
Source endpoint = 0x00,
Destination endpoint = 0x03, (or 0x08)
Command Class = COMMAND_CLASS_BASIC,
Command = BASIC_SET,
Value = 0x01 ~ 0x63]

Off : [Command Class COMMAND CLASS MULTI CHANNEL, MULTI CHANNEL CMD ENCAP,
Source endpoint = 0x00,
Destination endpoint = 0x03, (or 0x08)
Command Class = COMMAND_CLASS_BASIC,
Command = BASIC_SET,
Value = 0x00]

On : [Command Class COMMAND CLASS MULTI CHANNEL, MULTI CHANNEL CMD ENCAP,

Source endpoint = 0x00,
Destination endpoint = 0x03, (or 0x08)
Command Class = COMMAND_CLASS_SWITCH_MULTILEVEL,
Command = SWITCH_MULTILEVEL_SET,
Value = 0x01 ~ 0x63]

Off : [Command Class COMMAND CLASS MULTI CHANNEL, MULTI CHANNEL CMD ENCAP,
Source endpoint = 0x00,
Destination endpoint = 0x03, (or 0x08)
Command Class = COMMAND_CLASS_SWITCH_MULTILEVEL,
Command = SWITCH_MULTILEVEL_SET,
Value = 0x00]

2-2 BASIC_GET

The dimmer module will report their On/Off state of the inquired endpoint to the Controller.

For example :

Basic Get Command : [Command Class COMMAND CLASS MULTI CHANNEL, MULTI CHANNEL CMD ENCAP,
Source endpoint = 0x00,
Destination endpoint = 0x08, (or 0x03)
Command Class = COMMAND_CLASS_BASIC,
Command = BASIC_GET]

Basic Report Command : [Command Class COMMAND CLASS MULTI CHANNEL, MULTI CHANNEL CMD ENCAP,
Source endpoint = 0x08, (or 0x03)
Destination endpoint = 0x00,
Command Class = COMMAND_CLASS_BASIC,
Command = BASIC_REPORT,
Value = 0x00 ~ 0x63]

3. Controlling root device by Z-Wave command

The root device will respond to BASIC_SET、BINARY_SWITCH_SET by On/Off the endpoint1. The root device will respond to MULTILEVEL_SWITCH_SET by On/Off the endpoint3.

3-1 BASIC_SET / BINARY_SWITCH_SET

The relay module 1 (endpoint1) will switch its On/Off state when controlled by the Controller.

For example :

On : [Command Class = COMMAND_CLASS_BASIC,
Command = BASIC_SET,
Value = 0x63]

Off : [Command Class = COMMAND_CLASS_BASIC,
Command = BASIC_SET,
Value = 0x00]

On : [Command Class = COMMAND_CLASS_SWITCH_BINARY,
Command = SWITCH_BINARY_SET,

Value = 0xFF]
Off : [Command Class = COMMAND_CLASS_SWITCH_BINARY, Command = SWITCH_BINARY_SET, Value = 0x00]

3-2 MULTILEVEL_SWITCH_SET

The dimmer module 3 (endpoint3) will change their level when it is controlled by the Controller.

For example :

On : [Command Class = COMMAND_CLASS_SWITCH_MULTILEVEL, Command = SWITCH_MULTILEVEL_SET, Value = 0x01 ~ 0x63]
Off : [Command Class = COMMAND_CLASS_SWITCH_MULTILEVEL, Command = SWITCH_MULTILEVEL_SET, Value = 0x00]

Z-Wave's Groups (Association Command Class Version 2)

The Switch can be set to send reports to control associated Z-Wave devices. It supports 9 association groups in which every group has two support nodes. Group1 is Lifeline support DEVICE_RESET_LOCALLY_NOTIFICATION and CENTRAL_SCENE_NOTIFICATION.

Group2 and Group7 which correspond to relay modules 1 and 2 support COMMAND_CLASS_SWITCH_BINARY. The relay modules 1 and 2 correspond to endpoints 1 and 6. The device type of endpoints 1 and 6 is POWER SWITCH BINARY.

Group4 and Group9 which correspond to dimmer module 3 and 4 support COMMAND_CLASS_SWITCH_MULTILEVEL. The dimmer modules 3 and 4 correspond to endpoints 3 and 8. The device type of endpoints 3 and 8 is POWER SWITCH MULTILEVEL.

Group3、5、6、8 which correspond to smart buttons ②、④、⑥、⑧ support COMMAND_CLASS_CENTRAL_SCENE. The smart buttons ②、④、⑥、⑧ correspond to endpoints 2、4、5、7. The device type of endpoints 1 and 6 are BASIC WALL CONTROLLER.

Mapping to Association groups on the root device

Root device	Endpoint 1	Endpoint 2	Endpoint 3	Endpoint 4
Group1 : Lifeline	Group1 : Lifeline	Group1 : Lifeline	Group1 : Lifeline	Group1 : Lifeline
Group2 : Switch_Binary_ Set from Endpoint 1	Group2 : Switch_Binary_ Set	Group2 : Basic_Set	Group2 : Switch_Multilev el_Set	Group2 : Basic_Set
Group3 : Basic_Set from				

Endpoint 2				
Group4 : Switch_Multilevel_Set from Endpoint 3				
Group5 : Basic_Set from Endpoint 4				
Group6 : Basic_Set from Endpoint 5				
Group7 : Switch_Binary_Set from Endpoint 6				
Group8 : Basic_Set from Endpoint 7				
Group9 : Switch_Multilevel_Set from Endpoint 8				

Endpoint 5	Endpoint 6	Endpoint 7	Endpoint 8	
Group1 : Lifeline	Group1 : Lifeline	Group1 : Lifeline	Group1 : Lifeline	
Group2 : Basic_Set	Group2 : Switch_Binary_Set	Group2 : Basic_Set	Group2 : Switch_Multilevel_Set	

Multi Channel Command Class information of endpoints :

Root Device :
Device type : POWER_SWITCH_BINARY
Supported Command Classes : COMMAND_CLASS_ZWAVEPLUS_INFO,
COMMAND_CLASS_SWITCH_BINARY,
COMMAND_CLASS_SWITCH_MULTILEVEL,
COMMAND_CLASS_ASSOCIATION,
COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION,
COMMAND_CLASS_ASSOCIATION_GRP_INFO,
COMMAND_CLASS_TRANSPORT_SERVICE,
COMMAND_CLASS_VERSION,
COMMAND_CLASS_MANUFACTURER_SPECIFIC,
COMMAND_CLASS_DEVICE_RESET_LOCALLY,
COMMAND_CLASS_POWERLEVEL,
COMMAND_CLASS_SECURITY,
COMMAND_CLASS_SECURITY_2,

COMMAND_CLASS_MULTI_CHANNEL,
COMMAND_CLASS_CENTRAL_SCENE,
COMMAND_CLASS_SUPERVISION,
COMMAND_CLASS_FIRMWARE_UPDATE_MD

Controlled Command Classes : None

Description : When Reset function is triggered, it will send DEVICE_RESET _LOCALLY_NOTIFICATION to nodes of group 1.

Endpoint 1 :

Device type : POWER_SWITCH_BINARY

Supported Command Classes : COMMAND_CLASS_ZWAVEPLUS_INFO,
COMMAND_CLASS_SWITCH_BINARY,
COMMAND_CLASS_ASSOCIATION,
COMMAND_CLASS_ASSOCIATION_GRP_INFO,
COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION,
COMMAND_CLASS_SUPERVISION,
COMMAND_CLASS_SECURITY,
COMMAND_CLASS_SECURITY_2

Controlled Command Classes : COMMAND_CLASS_SWITCH_BINARY

Description : When the on/off state of relay module 1 is changed, it will send SWITCH_BINARY_SET command to nodes of group 2.

Endpoint 2 :

Device type : BASIC WALL CONTROLLER

Supported Command Classes : COMMAND_CLASS_ZWAVEPLUS_INFO,
COMMAND_CLASS_CENTRAL_SCENE,
COMMAND_CLASS_ASSOCIATION,
COMMAND_CLASS_ASSOCIATION_GRP_INFO,
COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION,
COMMAND_CLASS_SUPERVISION,
COMMAND_CLASS_SECURITY,
COMMAND_CLASS_SECURITY_2

Controlled Command Classes : COMMAND_CLASS_BASIC

Description : When one short press on smart button ②, it will turn on the nodes of group 3 by sending Basic_Set command and send Central_Scene_Notification to group 1 nodes. When two short presses on smart button ②, it will turn off the nodes of group 3 by sending Basic_Set command and send Central_Scene_Notification to group 1 nodes.

Endpoint 3 :

Device type : POWER SWITCH MULTILEVEL

Supported Command Classes : COMMAND_CLASS_ZWAVEPLUS_INFO,
COMMAND_CLASS_SWITCH_MULTILEVEL,
COMMAND_CLASS_ASSOCIATION,
COMMAND_CLASS_ASSOCIATION_GRP_INFO,
COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION,
COMMAND_CLASS_SUPERVISION,
COMMAND_CLASS_SECURITY,
COMMAND_CLASS_SECURITY_2

Controlled Command Classes : COMMAND_CLASS_SWITCH_MULTILEVEL

Description : When the level of dimmer module 1 is changed and achieved the desired level, it will send SWITCH_MULTILEVEL_SET command to nodes of group 4.

Endpoint 4 :

Device type : BASIC WALL CONTROLLER

Supported Command Classes : COMMAND_CLASS_ZWAVEPLUS_INFO,
COMMAND_CLASS_CENTRAL_SCENE,
COMMAND_CLASS_ASSOCIATION,
COMMAND_CLASS_ASSOCIATION_GRP_INFO,
COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION,
COMMAND_CLASS_SUPERVISION,
COMMAND_CLASS_SECURITY,
COMMAND_CLASS_SECURITY_2

Controlled Command Classes : COMMAND_CLASS_BASIC

Description : When one short press on smart button ④, it will turn on the nodes of group 5 by sending Basic_Set command and send Central_Scene_Notification to group 1 nodes. When two short presses on smart button ④, it will turn off the nodes of group 5 by sending Basic_Set command and send Central_Scene_Notification to group 1 nodes.

Endpoint 5 :

Device type : BASIC WALL CONTROLLER

Supported Command Classes : COMMAND_CLASS_ZWAVEPLUS_INFO,
COMMAND_CLASS_CENTRAL_SCENE,
COMMAND_CLASS_ASSOCIATION,
COMMAND_CLASS_ASSOCIATION_GRP_INFO,
COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION,
COMMAND_CLASS_SUPERVISION,
COMMAND_CLASS_SECURITY,
COMMAND_CLASS_SECURITY_2

Controlled Command Classes : COMMAND_CLASS_BASIC

Description : When one short press on smart button ⑥, it will turn on the nodes of group 6 by sending Basic_Set command and send Central_Scene_Notification to group 1 nodes. When two short presses on smart button ⑥, it will turn off the nodes of group 6 by sending Basic_Set command and send Central_Scene_Notification to group 1 nodes.

Endpoint 6 :

Device type : POWER_SWITCH_BINARY

Supported Command Classes : COMMAND_CLASS_ZWAVEPLUS_INFO,
COMMAND_CLASS_SWITCH_BINARY,
COMMAND_CLASS_ASSOCIATION,
COMMAND_CLASS_ASSOCIATION_GRP_INFO,
COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION,
COMMAND_CLASS_SUPERVISION,
COMMAND_CLASS_SECURITY,
COMMAND_CLASS_SECURITY_2

Controlled Command Classes : COMMAND_CLASS_SWITCH_BINARY

Description : When the on/off state of relay module 2 is changed, it will send SWITCH_BINARY_SET command to nodes of group 7.

Endpoint 7 :

Device type : BASIC WALL CONTROLLER

Supported Command Classes : COMMAND_CLASS_ZWAVEPLUS_INFO,
COMMAND_CLASS_CENTRAL_SCENE,
COMMAND_CLASS_ASSOCIATION,

COMMAND_CLASS_ASSOCIATION_GRP_INFO,
COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION,
COMMAND_CLASS_SUPERVISION,
COMMAND_CLASS_SECURITY,
COMMAND_CLASS_SECURITY_2

Controlled Command Classes : COMMAND_CLASS_BASIC

Description : When one short press on smart button ⑧, it will turn on the nodes of group 8 by sending Basic_Set command and send Central_Scene_Notification to group 1 nodes. When two short presses on smart button ⑧, it will turn off the nodes of group 8 by sending Basic_Set command and send Central_Scene_Notification to group 1 nodes.

Endpoint 8 :

Device type : POWER SWITCH MULTILEVEL

Supported Command Classes : COMMAND_CLASS_ZWAVEPLUS_INFO,
COMMAND_CLASS_SWITCH_MULTILEVEL,
COMMAND_CLASS_ASSOCIATION,
COMMAND_CLASS_ASSOCIATION_GRP_INFO,
COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION,
COMMAND_CLASS_SUPERVISION,
COMMAND_CLASS_SECURITY,
COMMAND_CLASS_SECURITY_2

Controlled Command Classes : COMMAND_CLASS_SWITCH_MULTILEVEL

Description : When the level of dimmer module 2 is changed and achieved the desired level, it will send SWITCH_MULTILEVEL_SET command to nodes of group 9.

1. Auto report to Grouping 1 (Maximum 2 Nodes)

1-1 Reset Event Report to Lifeline

When user executes the reset function by pressing button ⑤, it will send a "DEVICE RESET LOCALLY NOTIFICATION" to the nodes of Group1.

For example :

Reset:	[COMMAND CLASS DEVICE RESET LOCALLY, DEVICE RESET LOCALLY NOTIFICATION]

2. Control Grouping 2~9 (Maximum 2 Nodes)

2-1 Relay On/Off Event

When the "on" or "off" state has been changed, it will send Switch Binary Set to control the nodes of Group 2 or 7.

For example :

ON :	[Command Class COMMAND CLASS MULTI CHANNEL, MULTI CHANNEL CMD ENCAP, Source endpoint = 0x01, (or 0x06) Destination endpoint = 0x01, Command Class = COMMAND_CLASS_SWITCH_BINARY, Command = SWITCH_BINARY_SET, Value = 0xFF]
OFF :	[Command Class COMMAND CLASS MULTI CHANNEL, MULTI CHANNEL CMD ENCAP, Source endpoint = 0x01, (or 0x06) Destination endpoint = 0x01,

	Command Class = COMMAND_CLASS_SWITCH_BINARY, Command = SWITCH_BINARY_SET, Value = 0x00]

2-2 Dimmer module On/Off Event

When the dimmer level has been changed and stop, it will send Switch Multilevel Set to control the nodes of Group 4 or 9.

For example :

ON :	[Command Class COMMAND CLASS MULTI CHANNEL, MULTI CHANNEL CMD ENCAP, Source endpoint = 0x03, (or 0x08) Destination endpoint = 0x01, Command Class = COMMAND_CLASS_SWITCH_MULTILEVEL, Command = SWITCH_MULTILEVEL_SET, Value = 0x01 ~ 0x63] (The value is the same as the stopped dimmer level.)
OFF :	[Command Class COMMAND CLASS MULTI CHANNEL, MULTI CHANNEL CMD ENCAP, Source endpoint = 0x03, (or 0x08) Destination endpoint = 0x01, Command Class = COMMAND_CLASS_SWITCH_MULTILEVEL, Command = SWITCH_MULTILEVEL_SET, Value = 0x00]

3. Pressing button control the correspondent Group (Maximum 2 Nodes)

3-1 Pressing button to switch On/Off Relay

Button① correspond to relay1 and button⑦ correspond to relay2. When the relay is off, shortly pressing the assigned button will turn it on and send Basic_Set command to the nodes of group 2 or 7, and vice versa.

For example :

ON :	[Command Class COMMAND CLASS MULTI CHANNEL, MULTI CHANNEL CMD ENCAP, Source endpoint = 0x01, (or 0x06) Destination endpoint = 0x01, (send to correspond grouping nodes) Command Class = COMMAND_CLASS_SWITCH_BINARY, Command = SWITCH_BINARY_SET, Value = 0xFF]
OFF :	[Command Class COMMAND CLASS MULTI CHANNEL, MULTI CHANNEL CMD ENCAP, Source endpoint = 0x01, (or 0x06) Destination endpoint = 0x01, (send to correspond grouping nodes) Command Class = COMMAND_CLASS_SWITCH_BINARY, Command = SWITCH_BINARY_SET, Value = 0x00]

3-2 Pressing button to control level of dimmer

Button③ correspond to dimmer module 3 and button⑨ correspond to dimmer module 4. When if the dimmer stays at 30%, shortly pressing the assigned button will turn it off and send Switch_Multilevel_Set to the nodes of group 4 or 9. Shortly pressing the same button again will turn it back to the last level (30%) and send Switch_Multilevel_Set to the nodes of group 4 or 9. To adjust the dim level, press

and hold the assigned button until the desired dim level is achieved, then release. It will send the Switch_Multilevel_Set command to the nodes of group 4 or 9.

For example :

ON : (Shortly pressing button)	[Command Class COMMAND CLASS MULTI CHANNEL, MULTI CHANNEL CMD ENCAP, Source endpoint = 0x03, (or 0x08) Destination endpoint = 0x01, (send to correspond grouping nodes) Command Class = COMMAND_CLASS_SWITCH_MULTILEVEL, Command = SWITCH_MULTILEVEL_SET, Value = 0x01 ~ 0x63]
OFF : (Shortly pressing button)	[Command Class COMMAND CLASS MULTI CHANNEL, MULTI CHANNEL CMD ENCAP, Source endpoint = 0x03, (or 0x08) Destination endpoint = 0x01, (send to correspond grouping nodes) Command Class = COMMAND_CLASS_SWITCH_MULTILEVEL, Command = SWITCH_MULTILEVEL_SET, Value = 0x00]
Dim : (Release button after a long pressing)	[Command Class COMMAND CLASS MULTI CHANNEL, MULTI CHANNEL CMD ENCAP, Source endpoint = 0x03, (or 0x08) Destination endpoint = 0x01, (send to correspond grouping nodes) Command Class = COMMAND_CLASS_SWITCH_MULTILEVEL, Command = SWITCH_MULTILEVEL_SET, Value = 0x00 ~ 0x63]

3-3 Pressing smart button to control the corresponding grouping nodes

The smart Button②、④、⑥ and ⑧ correspond to groups 3、5、6 and 8, respectively.

3-3-1 One short press :

One short press on a smart button,②、④、⑥ or ⑧, can turn on the nodes of group 3、5、6 or 8 by sending Basic_Set command. It will also send Central_Scene_Notification to group 1 nodes.

For example :

[Command Class COMMAND CLASS MULTI CHANNEL, MULTI CHANNEL CMD ENCAP, Source endpoint = 0x02, Destination endpoint = 0x01, (send to correspond grouping nodes) Command Class = COMMAND_CLASS_BASIC, Command = BASIC_SET, Value = 0xFF]
[COMMAND_CLASS_CENTRAL_SCENE, CENTRAL_SCENE_NOTIFICATION, Value1 = 0x03 – Sequence number, Value2 = 0x80 – Key pressed 1 time (Slow refresh = True), Value3 = 0x01 – Scene number]

3-3-2 Two short presses:

Two short press on a smart button②、④、⑥ or ⑧, can turn off the nodes of group 3 、 5 、 6 or 8 by sending Basic_Set command. It will also send Central_Scene_Notification to group 1 nodes.

For example :

[Command Class COMMAND CLASS MULTI CHANNEL, MULTI CHANNEL CMD ENCAP,
Source endpoint = 0x02,
Destination endpoint = 0x01, (send to correspond grouping nodes)
Command Class = COMMAND_CLASS_BASIC,
Command = BASIC_SET,
Value = 0x00]

[COMMAND_CLASS_CENTRAL_SCENE, CENTRAL_SCENE_NOTIFICATION,
Value1 = 0x03 – Sequence number,
Value2 = 0x83 – Key pressed 2 time (Slow refresh = True),
Value3 = 0x01 – Scene number]

Firmware update over the air (OTA)

PAN26 is based on 500 series SoC and supports Firmware Update Command Class, it can receive the updated firmware image sent by controller via the Z-wave RF media. It is a helpful and convenient way to improve a function if needed.

Command Classes

The PAN26 supports Command Classes including…

Command Class	Version	Required Security Class
Association	2	Highest granted Security Class
Association Group Information	1	Highest granted Security Class
Basic	1	Highest granted Security Class
Central Scene	3	Highest granted Security Class
Device Reset Locally	1	Highest granted Security Class
Firmware Update Meta Data	4	Highest granted Security Class
Manufacturer Specific	2	Highest granted Security Class
Multi Channel	4	Highest granted Security Class
Multi Channel Association	3	Highest granted Security Class
Powerlevel	1	Highest granted Security Class
Security 0	1	None
Security 2	1	None
Switch Binary	1	Highest granted Security Class
Switch Multilevel	1	Highest granted Security Class
Supervision	1	None
Transport Service	2	None
Version	3	Highest granted Security Class
Z-Wave Plus Info	2	None

Troubleshooting

Symptom	Cause of Failure	Recommendation
The PAN26 does not work and the LED light is off	1. The PAN26 is not plugged into the	1.Check power connect properly

	electrical outlet properly	
	2. The Switch is broken	2. Don't open up the Switch and send back for repair.
The LED light is on, but cannot turn ON or OFF PAN26	1. Check if the load plugged into the Switch has its own ON/OFF switch	1. Toggle the ON/OFF switch of the load to ON
	2. Is not carrying out association	2. Carry out association
	3. Same frequency interference	3.Wait for a while to re-try

Specification

Operating Voltage	100~120Vac/ 60Hz; 220~240Vac/ 50Hz
Maximum Load	10A (Resistive Load)
Range	Minimum 40 m in door 100m outdoor line of sight
Operating Temperature	0°C ~ 40°C
Frequency Range	868.4MHz & 869.85MHz/ EU (PAN26-1) 908.4MHz & 916.0MHz/ US (PAN26-2) 922~927MHz/ Taiwan/ Japan (PAN26-3) 916MHz/Israel(PAN26-7)

** Specifications are subject to change and improvement without notice.

FCC ID : RHHPAN26

Warning:

1. **Do not exceed the max loading**.

Disposal

This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling

Company of License Holder：Philio Technology Corporation

Address of License Holder：8F., No.653-2, Zhongzheng Rd., Xinzhuang Dist., New Taipei City 24257, Taiwan(R.O.C)

FCC Interference Statement

This equipment has been tested to comply with the limits for a Class B digital device, pursuant

to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.