Dimmer Protocol

Version: 1.1
Updated Date: Jun 6, 2013
Website: www.smarthomebus.com

Contents

History

Version	Author	Edit date	Changes
1.0.0		2013-6-5	Dimmer

1.1.1	Scene Control [0x0002]
1.1.2	Read scene No. of all zones [0xF078]
1.2	**Sequence**
1.2.1	Sequence Control [0x001A]
1.2.2	Read sequence No. of specify zone running [0xE014]
1.3	**Single Channel**
1.3.1	Single Channel Control [0x0031]
1.3.2	Reversing Control [0xDC1C]
1.3.3	Read status of channels [0x0033]
1.4	Forwardly Report Status by Dimmer [0xEFFF]
2	**Settings**
2.1	**Zone Settings**
2.1.1	Read setting of zones [0x0004]
2.1.2	Make zones of Dimmer [0x0006]
2.1.3	Read remark of one zone [0xF00A]
2.1.4	Write remark of one zone [0xF00C]
2.1.5	Read type of zone when power on [0xF051]
2.1.6	Write type of zone when power on [0xF053]
2.2	**Scene Settings**
2.2.1	Read scene model [0x0000]
2.2.2	Modify scene model [0x0008]
2.2.3	Read remark of specify scene of specify zone [0xF024]
2.2.4	Modify remark of specify scene of specify zone [0xF026]
2.2.5	Read scene No. of every zone when power on [0xF055]
2.2.6	Modify scene No. of every zone when power on [0xF057]
2.3	**Sequence Settings**
2.3.1	Read remark of sequence [0xF028]
2.3.2	Modify remark of sequence [0xF030]
2.3.3	Read setting of sequence running [0x0012]
2.3.4	Modify setting of sequence running [0x0018]
2.3.5	Read detail of a sequence in specify zone [0x0014]
2.3.6	Modify detail of a sequence in specify zone [0x0016]
2.4	**Single Channel settings**
2.4.1	Read channel remark [0xF00E]
2.4.2	Write channel remark [0xF010]
2.4.3	Read channel load type [0xF012]
2.4.4	Modify channel load type [0xF014]
2.5	**Limit of Brightness Level percent**
2.5.1	Read limit of current Dimmer [0xF016]
2.5.2	Write limit of current Dimmer [0xF018]

1 Commands Shared

Address Detection

1.1.1 Detect Address

Remark: Detect address by pressing broadcast address button

Supported Device: All modules which have broadcast button

Operation Code: **0x E5F5**		
Target Subnet ID:	Broadcast address	0xFF
Target Device ID:		
Additional Content		
LEN of additional content:: 0 byte		

Response

Operation Code: **0x E5F6**		
Target Subnet ID:	Broadcast address	0xFF
Target Device ID:		0xFF
Additional Content		
LEN of additional content::2 bytes		
Index of Additional Content	**Remark**	**Value**
0	Subnet ID of target device	1byte
1	Device ID of target device	1byte

1.1.2 Modify Address

Supported Device: All modules which have address broadcast button

Operation Code: **0xE5F7**

Target Subnet ID:	Specify old subnet ID of target device	scope 1-254
Target Device ID:	Specify old device ID of target device	scope 1-254
Additional Content		
LEN of additional content::2 bytes		
Index of Additional Content	**Remark**	**Value**
0	New Subnet ID	1byte , scope 1-254
1	New Device ID	1byte , scope 1-254

Response

Operation Code: **0x E5F8**		
Target Subnet ID:	Broadcast address	0xFF
Target Device ID:		0xFF
Additional Content		
LEN of additional content::1byte		
Index of Additional Content	**Remark**	**Value**
0	Flag for success or Failure	1byte Success =0xF8 Failure=0xF5

1.2 Device Backup

1.2.1 Request Total QTY of packages from PC to target Device

Supported Device: All G4 Modules

Operation Code: **0xDC10**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Is Big UDP Package format : No		
Additional Content		
LEN of additional content:0 byte		

Response

Operation Code: **0x DC11**		
Target Subnet ID:	Specify subnet ID of target device	1byte,scope 1-254
Target Device ID:	Specify device ID of target device	1byte,scope 1-254
Is Big UDP Package format: No		
Additional Content		
LEN of additional content:3bytes		
Index of Additional Content	**Remark**	**Value**
0	Flag of success or failure	1byte Success=0xF8 Failure=0xF5
1	High 8 bits of Total QTY of packages	Total QTY of Packages : 2 bytes
2	Low 8 bits Total QTY of packages	

1.2.2 Request Current Small Package from PC to target device

Supported Device: all G4 modules

Operation Code: **0xDC14**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Is big UDP Package format :No		
Additional Content		
LEN of additional content::2 bytes		
Index of Additional Content	**Remark**	**Value**
0	High 8 bits of current Package No	Current Package No: 2 bytes
1	Low 8 bits of current Package No	

Response

Operation Code: **0x DC15**		
Target Subnet ID:	Specify subnet ID of target device	1byte,scope 1-254
Target Device ID:	Specify device ID of target device	1byte,scope 1-254
Is big UDP Package format : **No**		

Additional Content		
LEN of additional content: MAX. 65 bytes (Max. Flash data is 59 bytes)		
Index of Additional Content	**Remark**	**Value**
0	High 8 bits of current package No	Current Package No : 2 bytes
1	low 8 bits of current package No	
2	Flag of external flash or inner memory	1byte external flash=1 inner memory=0
3	High 8 bits of flash Start Address	3 bytes
4	Medium 8 bits of flash Start Address	
5	Low 8 bits of flash Start Address	
6	Flash data start	
…		
64 (MAX.)	Flash data end	

1.3 Device Restore

1.3.1 Send Total QTY of Packages from PC to Target Device

Supported Device: All Modules

Operation Code: **0xDC16**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Is Big UDP Package format : No		
Additional Content		
LEN of additional content:2 bytes		
Index of Additional Content	**Remark**	**Value**
0	High 8 bits of total QTY of packages	Total QTY of packages : 2 bytes
1	Low 8 bits total QTY of packages	

Response

Operation Code: **0xDC17**		
Target Subnet ID:	Specify subnet ID of target device	1byte,scope 1-254
Target Device ID:	Specify device ID of target device	1byte,scope 1-254
Is Big UDP Package format: No		
Additional Content		
LEN of additional content:1byte		
Index of Additional Content	**Remark**	**Value**
0	Flag of success or failure	1byte Success=0xF8 Failure=0xF5

1.3.2 Send Small Package from PC to Target Device

Supported Device: All modules

Operation Code: **0xDC1A**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Is Big UDP Package format : **No**		
Additional Content		
LEN of additional content: MAX. 65 bytes (Max. Flash data is 59 bytes)		
Index of Additional Content	**Remark**	**Value**
0	High 8 bits of current package No	Current Package No : 2 bytes
1	low 8 bits of current package No	
2	Flag of external flash or inner memory	1byte external flash=1 inner memory=0
3	High 8 bits of flash start address	3 bytes
4	Medium 8 bits of flash Start Address	
5	Low 8 bits of flash start address	
6	Flash data start	
…		
64 (MAX.)	Flash data end	

Response

Operation Code: **0xDC1B**		
Target Subnet ID:	Specify subnet ID of target device	1byte,scope 1-254
Target Device ID:	Specify device ID of target device	1byte,scope 1-254

Is Big UDP Package format: No		
Additional Content		
LEN of additional content::3bytes		
Index of Additional Content	**Remark**	**Value**
0	Flag of success or failure	1byte Success=0xF8 Failure=0xF5
1	High 8 bits of current package No	Current Package No : 2 bytes
2	Low 8 bits of current package No	

1.4 MAC Address

1.4.1 Read MAC Address

Supported Device: All modules

Operation Code: **0x F003**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Is Big UDP Package format : **No**		
Additional Content		
LEN of additional content: 0 byte		
Index of Additional Content	**Remark**	**Value**

Response

Operation Code: **0xF004**		
Target Subnet ID:	Specify subnet ID of target device	1byte,scope 1-254
Target Device ID:	Specify device ID of target device	1byte,scope 1-254
Is Big UDP Package format: No		
Additional Content		
LEN of additional content: If is not hotel devices ,8 bytes, more bytes no use		
Index of Additional Content	**Remark**	**Value**
0	MAC 1st byte	1byte
1	MAC 2nd byte	1byte
2	MAC 3rd byte	1byte

3	MAC 4th byte	1byte
4	MAC 5th byte	1byte
5	MAC 6th byte	1byte
6	MAC 7th byte	1byte
7	MAC 8th byte	1byte
8	1st byte of Remark	20bytes, If the length of remark is less than 20, please use ASCII of space.
9	2nd byte of remark	
10	3rd byte of remark	
11	4th byte of remark	

1.4.2 Modify MAC Address

Supported Device: All modules

Operation Code: **0x F001**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Is Big UDP Package format : **No**		
Additional Content		
LEN of additional content: 8 bytes		
Index of Additional Content	**Remark**	**Value**
0	MAC 1st byte	1byte
1	MAC 2nd byte	1byte
2	MAC 3rd byte	1byte
3	MAC 4th byte	1byte
4	MAC 5th byte	1byte
5	MAC 6th byte	1byte
6	MAC 7th byte	1byte
7	MAC 8th byte	1byte

Response

Operation Code: **0xF002**		
Target Subnet ID:	Specify subnet ID of target device	1byte,scope 1-254
Target Device ID:	Specify device ID of target device	1byte,scope 1-254
Additional Content		
LEN of additional content: 1 byte		
Index of Additional Content	**Remark**	**Value**
0	Flag of success or failure	1byte Success=0xF8

		Failure=0xF5

1.5 Read device remark

Remark:This operation has two ways to use

1 Send to specify device to get its remark

2 Broadcast to the LAN to get there devices' remark on the LAN

Supported Device: All modules

1

Operation Code: **0x 000E**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Is Big UDP Package format : **No**		

Response

Operation Code: **0x000F**		
Target Subnet ID:	Specify subnet ID of target device	1byte,scope 1-254
Target Device ID:	Specify device ID of target device	1byte,scope 1-254
Additional Content		
LEN of additional content: 20 byte		
Index of Additional Content	**Remark**	**Value**
0	1st byte of Remark	20bytes, If the length of remark is less than 20, please use ASCII of space.
1	2nd byte of remark	
2	3rd byte of remark	
3	4th byte of remark	
4	5th byte of remark	
5	6th byte of remark	
6	7th byte of remark	
7	8th byte of remark	
8	9th byte of remark	
9	10th byte of remark	
10	11th byte of remark	
11	12th byte of remark	
12	13th byte of remark	
13	14th byte of remark	
14	15th byte of remark	
15	16th byte of remark	
16	17th byte of remark	
17	18th byte of remark	
18	19th byte of remark	

19	20th byte of remark	

2

Operation Code: **0x 000E**		
Target Subnet ID:	Broadcast address	0xFF
Target Device ID:	Broadcast address	0xFF
Is Big UDP Package format : **No**		

Response:

Devices in the same LAN will relay a random number time to response ,

Every one response as send to specify device

1.6 Write device remark

Supported Device: All modules

Operation Code: **0x 0010**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Is Big UDP Package format : **No**		
Additional Content		
LEN of additional content: 20 byte		
Index of Additional Content	**Remark**	**Value**
0	1st byte of Remark	20bytes, If the length of remark is less than 20, please use ASCII of space.
1	2nd byte of remark	
2	3rd byte of remark	
3	4th byte of remark	
4	5th byte of remark	
5	6th byte of remark	
6	7th byte of remark	
7	8th byte of remark	
8	9th byte of remark	
9	10th byte of remark	
10	11th byte of remark	
11	12th byte of remark	
12	13th byte of remark	
13	14th byte of remark	
14	15th byte of remark	
15	16th byte of remark	
16	17th byte of remark	

17	18th byte of remark	
18	19th byte of remark	
19	20th byte of remark	

Response

Operation Code: **0x0011**		
Target Subnet ID:	Specify subnet ID of target device	1byte,scope 1-254
Target Device ID:	Specify device ID of target device	1byte,scope 1-254
Additional Content		
LEN of additional content: 1 byte		
Index of Additional Content	**Remark**	**Value**
0	Flag for success/ failure	1byte, Success=0xF8 Failure =0xF5

1.7 Read firmware version

Supported Device: All modules

Operation Code: **0xEEFD**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Is Big UDP Package format : **No**		
Additional Content		
LEN of additional content: 0 byte		

Response

Operation Code: **0xEEFE**		
Target Subnet ID:	Specify subnet ID of target device	1byte,scope 1-254
Target Device ID:	Specify device ID of target device	1byte,scope 1-254
Is Big UDP Package format: No		
Additional Content		
LEN of additional content: 22 bytes,		
Index of Additional Content	**Remark**	**Value**
0 ~21	Version info	22 bytes

1.8 Modify subnetID and DeviceID by Mac address

Supported Device: All modules

Operation Code: **0x F005**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Is Big UDP Package format : **No**		
Additional Content		
LEN of additional content: 10 bytes		
Index of Additional Content	**Remark**	**Value**
0	MAC 1st byte	1byte
1	MAC 2nd byte	1byte
2	MAC 3rd byte	1byte
3	MAC 4th byte	1byte
4	MAC 5th byte	1byte
5	MAC 6th byte	1byte
6	MAC 7th byte	1byte
7	MAC 8th byte	1byte
8	SubnetID	1byte
9	SubDeciveID	1byte

Response

Operation Code: **0xF002**		
Target Subnet ID:	Specify subnet ID of target device	1byte,scope 1-254
Target Device ID:	Specify device ID of target device	1byte,scope 1-254
Additional Content		
LEN of additional content: 1 byte		
Index of Additional Content	**Remark**	**Value**
0	Flag of success or failure	1byte Success=0xF8 Failure=0xF5

1.9 To see whether the specify device is on line

Supported Device: All modules

Operation Code: **0xF065**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254

Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Is Big UDP Package format : **No**		
Additional Content		
LEN of additional content: 0 byte		

Response

Operation Code: **0xF066**		
Target Subnet ID:	Specify subnet ID of target device	1byte,scope 1-254
Target Device ID:	Specify device ID of target device	1byte,scope 1-254
Is Big UDP Package format: No		
Additional Content		
LEN of additional content: 0 bytes,		

2 Protocol for Hardware Programming

2.1 Outline

为了方便初级安装者，给产品增加硬件编程

2.1.1 Address conflicts red warning

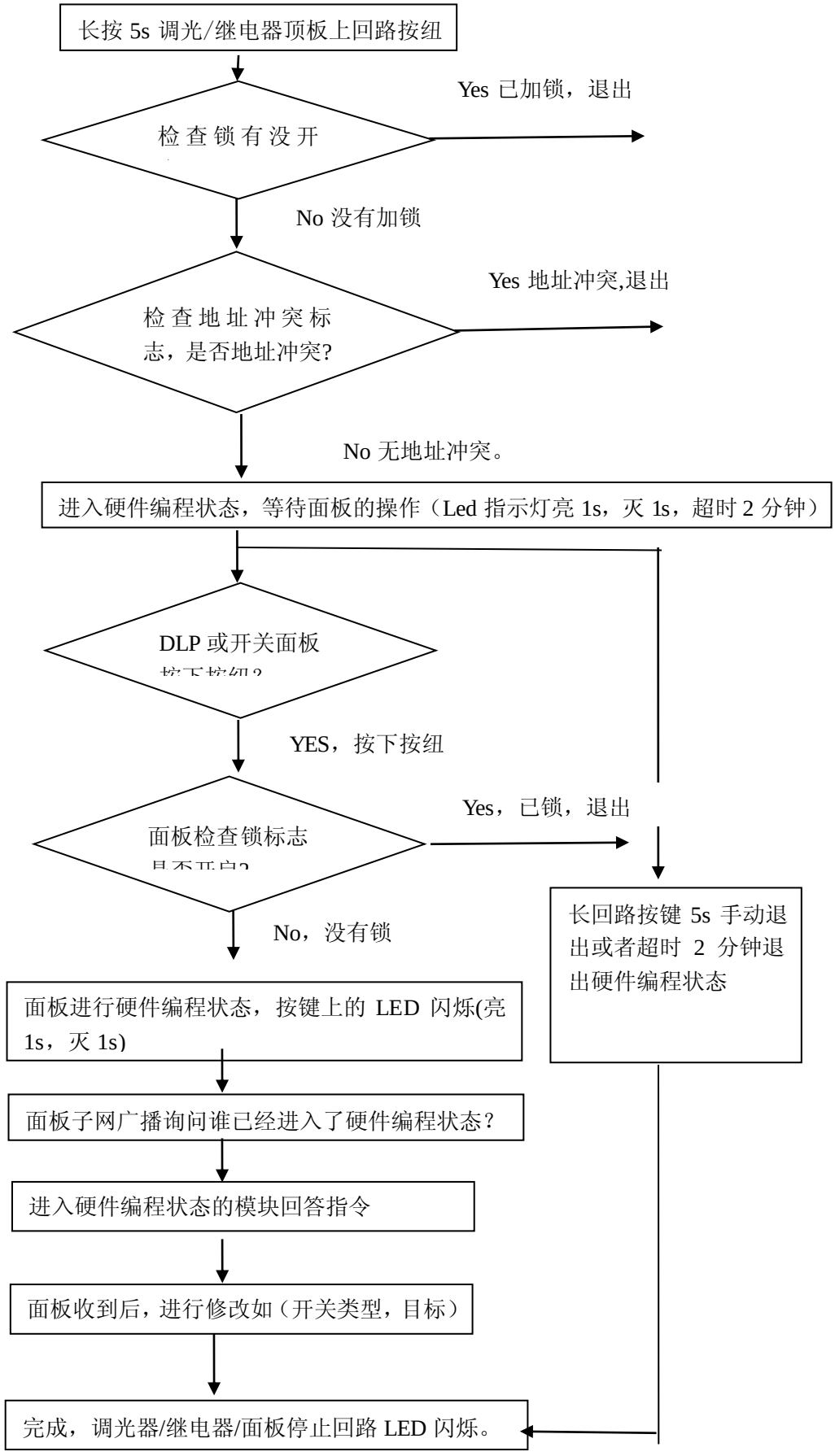
如果软件锁标志是开启的（Lock Active），那么模块上电需要检测本身的地址是否有冲突，如果发现有地址冲突时，所有有冲突的模块的地址广播按纽下的 LED 灯需要红色闪烁（Led 指示灯亮 0.3s，灭 0.5s），进行红色警告。

如果软件锁标志是关闭的（Lock inactive）,那么模块上电是不需要检测地址是否冲突的,也不会进行红色警告,这样就不会浪费太多的时间而影响系统的正常使用。

2.1.2 Address modification of human involvement

初级安装者可以在模块上进行地址的修改，而不修改使用电脑软件。
存在地址冲突的情况下的地址修改；
在已经存在地址冲突的情况下，这里 LED 已经在闪烁，如果长按地址广播按纽 5s,即进行地址修改，模块自动分配一个可以使用的地址给当前模块，修改地址完毕后，LED 灯转为绿色，停止闪烁。

2.1.3 Hardware Programming Flowchart



2.2 The lock flag hardware programming read / write

2.2.1 Read Lock

Supported Device: Dimmer/Relay/HVAC/9in1/DLP/Switch

Operation Code: **0x0280**		
Target Subnet ID:	Specify subnet ID of target device	scope 0-254
Target Device ID:	Specify device ID of target device	scope 0-254
Additional Content		
LEN of additional content:: 0 byte		

Response

Operation Code: **0x0281**		
Target Subnet ID:	Specify subnet ID of target device	scope 0-254
Target Device ID:	Specify device ID of target device	scope 0-254
Additional Content		
LEN of additional content::1 byte		
Index of Additional Content	**Remark**	**Value**
0	Status of Lock	1byte Active =1 Inactive=0

2.2.2 Modify Lock

Supported Device: Dimmer/Relay/HVAC/9in1/DLP/Switch

Operation Code: 0x0282		
Target Subnet ID:	Specify subnet ID of target device or Broadcast address 255	scope 0-255
Target Device ID:	Specify device ID of target device or Broadcast address 255	scope 0-255
Additional Content		
LEN of additional content:: 1 byte		

Index of Additional Content	Remark	Value
0	Status of Lock	1byte Active =1 Inactive=0

Response

Operation Code: **0x0283**		
Target Subnet ID:	Specify subnet ID of target device	scope 0-254
Target Device ID:	Specify device ID of target device	scope 0-254
Additional Content		
LEN of additional content::1 byte		
Index of Additional Content	**Remark**	**Value**
0	Flag of success/failure	1byte Success =0xF8 Failure=0xF5

2.3 Ask if any address conflict or not?

Supported Device: Dimmer/Relay/HVAC/9in1/DLP/Switch

Operation Code: **0x0284**		
Target Subnet ID:	subnet ID of itself	scope 0-254
Target Device ID:	Broadcast device address	255
Additional Content		
LEN of additional content:: 10 bytes		
Index of Additional Content	**Remark**	**Value**
0	Subnet ID of itself device	1byte
1	Device ID of itself device	1byte
2	1st byte of MAC of itself device	1byte
3	2nd byte of MAC of itself device	1byte
4	3rd byte of MAC of itself device	1byte
5	4th byte of MAC of itself device	1byte
6	5th byte of MAC of itself device	1byte
7	6th byte of MAC of itself device	1byte
8	7th byte of MAC of itself device	1byte
9	8th byte of MAC of itself device	1byte

Response

Operation Code: **0x0285**		
Target Subnet ID:	Specify subnet ID of target device	scope 0-254
Target Device ID:	Specify device ID of target device	scope 0-254
Additional Content		
LEN of additional content::9 bytes		
Index of Additional Content	**Remark**	**Value**
0	If exist same address or not	1byte Exist =1 Do no exist=0
1	1st byte of MAC of target device	1byte
2	2nd byte of MAC of target device	1byte
3	3rd byte of MAC of target device	1byte
4	4th byte of MAC of target device	1byte
5	5th byte of MAC of target device	1byte
6	6th byte of MAC of target device	1byte
7	7th byte of MAC of target device	1byte
8	8th byte of MAC of target device	1byte

2.4 Create New Random Address

备注：为了极少地址冲突的机率，需要在 1-254 中产生随机数，每个随机数并需要暂存。在查询前，需要检测历史记录中是否存在，如果存在历史记录，须重新产生一个随机数；如果不存在在历史记录，即查询当前地址是否可用。如果不可用，继续继续产生随机地址。
如果在 2s 钟内没有收到回答，即表明此地址可用。

2.5 DLP/Switch Programming

备注：问有哪些模块进入硬件编程状态？

Supported Device: DLP/Switch

Operation Code: **0x0286**		
Target Subnet ID:	subnet ID of itself	scope 0-254
Target Device ID:	Broadcast device address	255
Additional Content		
LEN of additional content:: 0 byte		

Response

Operation Code: **0x0287**		
Target Subnet ID:	Specify subnet ID of target device	scope 0-254
Target Device ID:	Specify device ID of target device	scope 0-254
Additional Content		
LEN of additional content::7 bytes		
Index of Additional Content	**Remark**	**Value**
0	Subnet ID of controlled device (like Dimmer/Relay/HVAC/9in1)	1byte
1	Device ID of controlled device	1byte
2	Device Category	1byte **(see the definition below)**
3	1st Parameter	1byte
4	2nd Parameter	1byte
5	3rd Parameter	1byte
6	4th Parameter	1byte

Definition of Parameter according to device category

SN	Device Category	1st Parameter	2nd Parameter	3rd Parameter	4th Parameter
1	Dimmer	Channel No (brightness =100)	<N/A>	<N/A>	<N/A>
2	Relay	Channel No	<N/A>	<N/A>	<N/A>
3	HVAC	Subnet ID	Device ID	<N/A>	<N/A>
4	Sensors	<N/A>	<N/A>	<N/A>	<N/A>
5	Z-Audio	<N/A>	<N/A>	<N/A>	<N/A>

2.6 After the success of human involvement to modify the address, subnet broadcast to all devices

Supported Device: DLP/Switch/Dimmer/Relay/9in1/HVAC

Operation Code: **0x0288**		
Target Subnet ID:	subnet ID of itself	scope 0-254

Target Device ID:	Broadcast device address	255
Additional Content		
LEN of additional content:: 2 byte		
Index of Additional Content	**Remark**	**Value**
0	Old Subnet ID (修改前的地址)	1byte
1	Old Device ID (修改前的地址)	1byte

备注：
当有地址冲突的设备收到以上指令后，检测旧地址是否与本身地址相同，如果不相同，不用处理；如果相同，则在 500ms 内产生一个延时的随机数，之后发送指令 “**2. Ask if any address conflict or not? 问当前子网中有没有与自己的地址冲突？**”

5 Dimmer

1 Control And Status

1.1 Scene

1.1.1 Scene Control

Operation Code: **0x0002**		
Target Subnet ID:	Specify subnet ID of target device	scope 1-254
Target Device ID:	Specify device ID of target device	scope 1-254
Additional Content		
LEN of additional content:: 2 bytes		
Index of Additional Content	**Remark**	**Value**
0	Area No	1byte scope 1-254
1	Scene No Scene No 0 is for stopping scene	1byte scope 1-254

Response

Operation Code: **0x0003**		
Target Subnet ID:	Broadcast address	0xFF
Target Device ID:	Broadcast address	0xFF
Additional Content		
LEN of additional content::3 + N bytes (If 2=< QTY of channels <= 8 ,N=1; If 8=< QTY of channels <= 16 ,N=2; If 16=< QTY of channels <= 24 ,N=3;)		
Index of Additional Content	**Remark**	**Value**
0	Area No	1byte
1	Scene No	1byte
2	QTY of channels	1byte
3	Status of channel1~channel8 Use Binary to describe channel status 0 = Off 1 = On (no percentage) From low bit to high bit Describe channel 1 to channel 8 Example: value1 binary is 0000 0001 ch#1 is on, others is off value25 binary is 0001 1001 ch#1 ch#4 ch#5 is on, others is off	1byte
4	Status of Channel 9~channel 16 (if have more than 8channels) Use Binary to describe channel status	1 byte
5	Status of Channel 17~channel 24 (if have more than 16channels) Use Binary to describe channel status	1 byte

1.1.2 Read scene No. of all zones running

Operation Code: **0xF078**		
Target Subnet ID:	Specify subnet ID of target device	scope 1-254
Target Device ID:	Specify device ID of target device	scope 1-254
Additional Content		
LEN of additional content:: 0 bytes		

Response

Operation Code: **0xF079**		
Target Subnet ID:	Broadcast address	0xFF
Target Device ID:	Broadcast address	0xFF
Additional Content		
LEN of additional content::QTY of zones bytes		
Index of Additional Content	**Remark**	**Value**
0	Scene No. scene that zone 1 running	1byte 0 = This zone is not running scene
1	Scene No. scene that zone 1 running	1byte 0 = This zone is not running scene
…	…	…
QTY of zones -1	Scene No. scene that Last zone running	1byte 0 = This zone is not running scene

1.2 Sequence

1.2.1 Sequence Control

Operation Code: **0x001A**		
Target Subnet ID:	Specify subnet ID of target device	scope 1-254
Target Device ID:	Specify device ID of target device	scope 1-254
Additional Content		

LEN of additional content:: 2 bytes		
Index of Additional Content	**Remark**	**Value**
0	Area No	1byte 1-254
1	Sequence No No 0 is for stopping sequence	1byte 1-254

Response

Operation Code: **0x001B**		
Target Subnet ID:	Broadcast address	0xFF
Target Device ID:	Broadcast address	0xFF
Additional Content		
LEN of additional content:: 2 bytes		
Index of Additional Content	**Remark**	**Value**
0	Area No	1byte
1	Sequence No	1byte

1.2.2 Read sequence No. of specify zone running

Operation Code: **0xE014**		
Target Subnet ID:	Specify subnet ID of target device	scope 1-254
Target Device ID:	Specify device ID of target device	scope 1-254
Additional Content		
LEN of additional content:: 1 byte		
Index of Additional Content	**Remark**	**Value**
0	Zone No.	1byte

Response

Operation Code: **0xE015**		
Target Subnet ID:	Broadcast address	0xFF
Target Device ID:	Broadcast address	0xFF
Additional Content		
LEN of additional content:: 2 bytes		
Index of Additional Content	**Remark**	**Value**
0	Zone No.	1byte
1	Sequence No. that zone 1 running	1byte 0 = This zone is not running sequence

1.3 Single Channel

1.3.1 Single Channel Control

Operation Code: **0x0031**		
Target Subnet ID:	Specify subnet ID of target device	scope 1-254
Target Device ID:	Specify device ID of target device	scope 1-254
Additional Content		
LEN of additional content:: 4 bytes		
Index of Additional Content	**Remark**	**Value**
0	Light Channel No	1byte 1-255 if Channel no is 255, it means broadcast channels of the device.
1	Brightness Level	1byte,0-100 it's percentage of brightness
2	High 8 bits of Running time	Scope of Running time is 0-3600s H=(Running time) div 256
3	Low 8 bits of Running Time	L=(Running time) Mod 256

Response

Operation Code: **0x0032**		
Target Subnet ID:	Broadcast address	0xFF
Target Device ID:	Broadcast address	0xFF
Additional Content		
LEN of additional content:: 3 bytes		
Index of Additional Content	**Remark**	**Value**
0	Current Channel No	1byte,
1	Flag for success/ failure	1byte, Success=0xF8 Failure =0xF5
2	Brightness Level	1byte Scope 0~100

1.3.2 Reversing Control

Remark:

If current status of channel is on, then it will be switched off when received command below;
if current status of channel is off, then it will be switched on when received command below;

Operation Code: **0xDC1C**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 4 bytes		
Index of Additional Content	**Remark**	**Value**
0	Channel No	1byte
1	reserved	1byte
2	High 8bits of Running time	1byte
3	Low 8bits of Running time	1byte

Response

Operation Code: **0xDC1D**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 2bytes		
Index of Additional Content	**Remark**	**Value**
0	Channel No	1byte
1	Flag of success or failure Success=0xF8 Failure=0xF5	1byte

1.3.3 Read Status of Channels

Operation Code: **0x0033**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		

LEN of additional content:: 0 byte

Response

Operation Code: **0x0034**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: (QTY of Channels + 1) bytes		
Index of Additional Content	**Remark**	**Value**
0	QTY of Channels	1byte
1	Status of Channel 1	1byte , scope 1-100
2	Status of Channel 2	1byte , scope 1-100
…	…	…
QTY of Channels	Status of last channel	1byte , scope 1-100

1.4 Forwardly Report Status by Dimmer

Every 5 seconds

or the statues of channel is changed by pressed the button on Dimmer/Relay/Zone Beast

Dimmer/Relay/Zone Beast will report status of by broadcast automatic.

Operation Code: **0x EFFF**		
Target Subnet ID:	Broadcast address	**0xFF**
Target Device ID:	Broadcast address	**0xFF**
Additional Content		
LEN of additional content:: (QTY of zones+1 +nub (nub = 1:Lesser than 8 channels; nub = 2: more than 8 channels and lesser than16 ;nub = 3 :more than 16 channels bytes lesser than24)		
Index of Additional Content	**Remark**	**Value**
0	QTY of Zones	1 byte

1	Status of Zone 1	1 byte 0 = sequence others = Scenes
2	Status of Zone 2	1 byte 0 = sequence others = Scenes
QTY of Zones	Status of Zone (QTY of Zones)	1 byte 0 = sequence others = Scenes
QTY of Zones + 1	QTY of Channels	1 byte
QTY of Zones + 2	Status of channel1~channel8 Use Binary to describe channel status 0 = Off 1 = On (no percentage) From low bit to high bit Describe channel 1 to channel 8 Example: value1 binary is 0000 0001 ch#1 is on, others is off value25 binary is 0001 1001 ch#1 ch#4 ch#5 is on, others is off	1 byte

QTY of Zones + 3	Status of Channel 9~channel 16 (if have more than 8channels) Use Binary to describe channel status	1 byte
QTY of Zones + 4	Status of Channel 17~channel 24 (if have more than 16channels) Use Binary to describe channel status	1 byte

2 Settings

2.1 Zone Setting

2.1.1 Read setting of zones

Operation Code: **0x0004**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 0 byte		

Response

Operation Code: **0x0005**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 4 + QTY of channels bytes		
Index of Additional Content	**Remark**	**Value**
0	High 8 bits of device type	1byte
1	Low 8 bits of device type	1byte
2	Subnet ID of target device	1byte , scope 1-254
3	Device ID of target device	1byte , scope 1-254
4	QTY zones of current device	1byte
5	Which zone did channel 1 been divided	1byte

		0 = no divided
6	Which zone did channel 2 been divided	1byte 0 = no divided
7	Which zone did channel 3 been divided	1byte 0 = no divided
…	…	…
4 + QTY of channels	Which zone did last channel been divided	1byte 0 = no divided

2.1.2 Make zones of Dimmer

Operation Code: **0x0006**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 3 + QTY of zones bytes		
Index of Additional Content	**Remark**	**Value**
0	Invalid	1byte
1	Invalid	1byte
2	Zone No.	1 byte
3	Flag for channel 1 is divided into current zone	1 byte 1 = this channel will be divided into current zone 0 = this channel will be not divided into current zone
4	Flag for channel 2 is divided into current zone	1 byte 1 = this channel divided into current zone 0 = this channel did not divided into current zone
Max channel num + 2	Flag for channel Max CH# is divided into current zone	1 byte 1 = this channel divided into current zone 0 = this channel did not divided into current zone

Response

Operation Code: **0x0007**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 1 byte		
Index of	**Remark**	**Value**

Additional Content		
0	Flag for success or Failure	1byte Success =0xF8 Failure=0xF5

2.1.3 Read remark of one zone

Operation Code: **0xF00A**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 1 byte		
Index of Additional Content	**Remark**	**Value**
0	Zone number	1byte

Response

Operation Code: **0xF00B**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 21 bytes		
Index of Additional Content	**Remark**	**Value**
0	Zone No.	1byte
1 ~20	Zone remark	20 bytes If the length of remark is less than 20, please use ASCII of space.

2.1.4 Write remark of one zone

Operation Code: **0xF00C**

Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 21 byte		
Index of Additional Content	**Remark**	**Value**
0	Zone No.	1byte
1 ~20	Zone remark	20 bytes If the length of remark is less than 20, please use ASCII of space.

Response

Operation Code: **0xF00D**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 1 bytes		
Index of Additional Content	**Remark**	**Value**
0	Zone No.	1byte

2.1.5 Read type of zone when power on

Operation Code: **0xF051**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 0 byte		

Response

Operation Code: **0xF052**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: QTY of zones bytes		

Index of Additional Content	Remark	Value
0	Type of zone 1	1byte 0 = restore to the statue of power off 1 = restore to specify scene
1	Type of zone 2	1byte 0 = restore to the statue of power off 1 = restore to specify scene
2	Type of zone 3	1byte 0 = restore to the statue of power off 1 = restore to specify scene
QTY of zones - 1	Type of last zone	1byte 0 = restore to the statue of power off 1 = restore to specify scene

2.1.6 Write type of zone when power on

Operation Code: **0xF053**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: QTY of zones bytes		
Index of Additional Content	**Remark**	**Value**
0	Type of zone 1	1byte 0 = restore to the statue of power off 1 = restore to specify scene
1	Type of zone 2	1byte 0 = restore to the statue of power off 1 = restore to specify scene
2	Type of zone 3	1byte 0 = restore to the statue of power off 1 = restore to specify scene
QTY of zones - 1	Type of last zone	1byte 0 = restore to the statue of power off 1 = restore to specify scene

Response

Operation Code: **0xF054**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 1 byte		
Index of Additional Content	**Remark**	**Value**
0	Flag for success or Failure	1byte Success =0xF8 Failure=0xF5

2.2 Scene Settings

2.2.1 Read scene model

Operation Code: **0x0000**		
Target Subnet ID:	Specify subnet ID of target device	scope 0-254
Target Device ID:	Specify device ID of target device	scope 0-254
Additional Content		
LEN of additional content::2 bytes		
Index of Additional Content	**Remark**	**Value**
0	Area No.	1byte
1	Scene No.	1byte

Response

Operation Code: **0x0001**		
Target Subnet ID:	Specify subnet ID of target device	scope 0-254
Target Device ID:	Specify device ID of target device	scope 0-254
Additional Content		
LEN of additional content:: N + 4 bytes		
Index of Additional Content	**Remark**	**Value**
0	Area No.	1byte
1	Scene No.	1byte

2	Time High 8 Octet	1byte
3	Time Low 8 Octet	1byte
4	Channel 1 Intensity	1byte 0 = Off 100 = On
5	Channel 2 Intensity	
6	Channel 3 Intensity	
7	Channel 4 Intensity	
.		
.		
n	Channel n Intensity	

2.2.2 Modify scene model

Operation Code: **0x0008**		
Target Subnet ID:	Specify subnet ID of target device	scope 0-254
Target Device ID:	Specify device ID of target device	scope 0-254
Additional Content		
LEN of additional content:: 4 + QTY of channels bytes		
Index of Additional Content	**Remark**	**Value**
0	Area No.	1byte
1	Scene No.	1byte
2	Time High 8 Octet	1byte
3	Time Low 8 Octet	1byte
4	Channel 1 Intensity	1byte 0 = Off 100 = On
5	Channel 2 Intensity	
6	Channel 3 Intensity	
7	Channel 4 Intensity	
…	…	…
3 + QTY of channels	Last channel Intensity	

Response

Operation Code: **0x0009**		
Target Subnet ID:	Specify subnet ID of target device	scope 0-254
Target Device ID:	Specify device ID of target device	scope 0-254
Additional Content		

LEN of additional content::1 bytes		
Index of Additional Content	**Remark**	**Value**
0	Success flag	1byte 0xF8 =success 0xF5=error

2.2.3 Read remark of specify scene of specify zone

Operation Code: **0xF024**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 0 byte		

Response

Operation Code: **0xF025**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 22 bytes		
Index of Additional Content	**Remark**	**Value**
0	Zone No.	1byte
1	Scene No.	1byte
2 ~21	Remark of current scene	20 byte ,If the length of remark is less than 20, please use ASCII of space.

2.2.4 Write remark of specify scene of specify zone

Operation Code: **0xF026**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		

LEN of additional content:: 22 bytes		
Index of Additional Content	**Remark**	**Value**
0	Zone No.	1byte
1	Scene No.	1byte
2 ~21	Remark of current scene	20 byte ,If the length of remark is less than 20, please use ASCII of space.

Response

Operation Code: **0xF027**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 2 bytes		
Index of Additional Content	**Remark**	**Value**
0	Flag for success or Failure	1byte Success =0xF8 Failure=0xF5
1	Scene No.	1byte

2.2.5 Read scene No. of every zone when power on

Operation Code: **0xF055**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 0 byte		

Response

Operation Code: **0xF056**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: QTY of zones bytes		
Index of Additional Content	**Remark**	**Value**
0	Scene No. for zone 1	1byte

	when power on	
1	Scene No. for zone 1 when power on	1byte
2	Scene No. for zone 1 when power on	1byte
QTY of zones - 1	Scene No. for Last zone when power on	1byte

2.2.6 Modify scene No. of every zone when power on

Operation Code: **0xF057**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: QTY of zones byte		
Index of Additional Content	**Remark**	**Value**
0	Scene No. for zone 1 when power on	1byte
1	Scene No. for zone 1 when power on	1byte
2	Scene No. for zone 1 when power on	1byte
QTY of zones - 1	Scene No. for Last zone when power on	1byte

Response

Operation Code: **0xF058**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 1 byte		
Index of Additional Content	**Remark**	**Value**
0	Flag for success or Failure	1byte Success =0xF8 Failure=0xF5

2.3 Sequence Settings

2.3.1 Read remark of specify sequence

Operation Code: **0xF028**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 2 bytes		
Index of Additional Content	**Remark**	**Value**
0	Zone No.	1byte
2	Sequence No.	1byte

Response

Operation Code: **0xF029**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 22 byte		
Index of Additional Content	**Remark**	**Value**
0	Zone No.	1byte
1	Sequence No.	1byte
2 ~ 21	Remark of current sequence	20 bytes If the length of remark is less than 20, please use ASCII of space.

2.3.2 Modify remark of specify sequence

Operation Code: **0xF030**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254

Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 22 bytes		
Index of Additional Content	**Remark**	**Value**
0	Zone No.	1byte
1	Sequence No.	1byte
2 ~ 21	Remark of current sequence	20 bytes If the length of remark is less than 20, please use ASCII of space.

Response

Operation Code: **0xF031**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 2 bytes		
Index of Additional Content	**Remark**	**Value**
0	Zone No.	1byte
1	Sequence No.	1byte

2.3.3 Read setting of sequence running

Operation Code: **0x0012**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 2 bytes		
Index of Additional Content	**Remark**	**Value**
0	Zone No.	1byte
2	Sequence No.	1byte

Response

Operation Code: **0xF013**

Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 5 bytes		
Index of Additional Content	**Remark**	**Value**
0	Zone No.	1byte
1	Sequence No.	1byte
2	Model of running	1 bytes 0 = Forward order 1 = Backward order 2 = Forward and backward order 3 = Random order 4 = Invalid
3	QTY of steps of sequence	1 byte
4	QTY of times of sequence running	1 byte Scope : 0 ~99 0 = Running no stop

2.3.4 Modify setting of sequence running

Operation Code: **0x0018**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 5 bytes		
Index of Additional Content	**Index of Additional Content**	**Index of Additional Content**
0	Zone No.	1byte
1	Sequence No.	1byte
2	Model of running	1 bytes 0 = Forward order 1 = Backward order 2 = Forward and backward order 3 = Random order 4 = Invalid
3	QTY of steps of sequence	1 byte

4	QTY of times of sequence running	1 byte Scope : 0 ~99 0 = Running no stop

Response

Operation Code: **0x0019**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 1 byte		
Index of Additional Content	**Remark**	**Value**
0	Flag for success or Failure	1byte Success =0xF8 Failure=0xF5

2.3.5 Read detail of a sequence in specify zone

Operation Code: **0x0014**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 3 bytes		
Index of Additional Content	**Remark**	**Value**
0	Zone No.	1byte
2	Sequence No.	1byte
3	Step No.	1byte

Response

Operation Code: **0x0015**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 6 bytes		
Index of Additional Content	**Remark**	**Value**
0	Zone No.	1byte

1	Sequence No.	1byte
2	Step No.	1 byte
3	Scene No.	1 byte
4	High 8 bit of time current step will stop	1byte
5	Low 8 bit of time current step will stop	1byte Unit :100ms

2.3.6 Modify detail of a sequence in specify zone

Operation Code: **0x0016**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 5 bytes		
Index of Additional Content	**Index of Additional Content**	**Index of Additional Content**
LEN of additional content:: 6 bytes		
Index of Additional Content	**Remark**	**Value**
0	Zone No.	1byte
1	Sequence No.	1byte
2	Step No.	1byte
3	Scene No.	1byte
4	High 8 bit of time current step will stop	1byte
5	Low 8 bit of time current step will stop	1byte Unit :100ms

Response

Operation Code: **0x0017**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 2 bytes		
Index of Additional Content	**Remark**	**Value**
0	Flag for success or Failure	1byte

		Success =0xF8 Failure=0xF5

2.4 Single Channel settings

2.4.1 Read channel remark

Operation Code: **0xF00E**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 1 byte		
Index of Additional Content	**Remark**	**Value**
0	Channel No.	1byte

Response

Operation Code: **0xF00F**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 21 bytes		
Index of Additional Content	**Remark**	**Value**
0	Channel No.	1byte
1 ~20	Current channel remark	20 bytes If the length of remark is less than 20, please use ASCII of space.

2.4.2 Write channel remark

Operation Code: **0xF010**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 21 byte		
Index of Additional Content	**Remark**	**Value**
0	Channel No.	1byte
1 ~20	Current channel remark	20 bytes If the length of remark is less than 20, please use ASCII of space.

Response

Operation Code: **0xF011**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 1 byte		
Index of Additional Content	**Remark**	**Value**
0	Flag for success or Failure	1byte Success =0xF8 Failure=0xF5

2.4.3 Read channel load type

Operation Code: **0xF012**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 0 byte		

Response

Operation Code: **0xF013**

Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: QTY of channels bytes		
Index of Additional Content	**Remark**	**Value**
0	Channel 1 load type	1byte See the blew table **Load type of channel**
1	Channel 2 load type	1byte
2	Channel 3 load type	1byte
QTY of channels -1	Last channel load type	1byte

Load type of channel

Undefined	Incandescent Lamp	Magnetic low-Votage Lamp	Electronic low-Votage Lamp	Fluorescent lamp	Neon/Cold Cathode Lamp	High-Intensity Discharge(non-dim only)Lamp	Test
0	1	2	3	4	5	6	7

2.4.4 Modify channel load type

Operation Code: **0xF014**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: QTY of channels bytes		
Index of Additional Content	**Remark**	**Value**
0	Channel 1 load type	1byte See the blew table **Load type of channel**
1	Channel 2 load type	1byte
2	Channel 3 load type	1byte
QTY of channels -1	Last channel load type	1byte

Response

Operation Code: **0xF015**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 1 byte		
Index of Additional Content	**Remark**	**Value**
0	Flag for success or Failure	1byte Success =0xF8 Failure=0xF5

Load type of channel

Undefined	Incandescent Lamp	Magnetic low-Votage Lamp	Electronic low-Votage Lamp	Fluorescent lamp	Neon/Cold Cathode Lamp	High-Intensity Discharge(non-dim only)Lamp	Test
0	1	2	3	4	5	6	7

2.5 Limit of Brightness Level percent

2.5.1 Read limit of every channel

Operation Code: **0xF016**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 1 byte		
Index of Additional Content	**Remark**	**Value**
0	High limit or low limit	1byte 0 = Low limit 1= High limit

Response

Operation Code: **0xF017**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254

Additional Content		
LEN of additional content:: 1 + QTY of channels bytes		
Index of Additional Content	**Remark**	**Value**
0	High limit or low limit	1byte 0 = Low limit 1= High limit
1	Channel 1 Limit Brightness Level percent If the first byte = 0,is low limit If the first byte = 1,is high limit	1byte Scope 0~100
2	Channel 2 Limit Brightness Level percent If the first byte = 0,is low limit If the first byte = 1,is high limit	1byte Scope 0~100
QTY of channels	Last channel Limit Brightness Level percent If the first byte = 0,is low limit If the first byte = 1,is high limit	1byte Scope 0~100

2.5.2 Write limit of every channel

Operation Code: **0xF018**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 1 + QTY of channels bytes		
Index of Additional Content	**Remark**	**Value**
0	High limit or low limit	1byte 0 = Low limit 1= High limit
1	Channel 1 Limit Brightness Level percent If the first byte = 0,is low limit If the first byte = 1,is high limit	1byte Scope 0~100
2	Channel 2 Limit Brightness Level percent If the first byte = 0,is low limit If the first byte = 1,is high limit	1byte Scope 0~100

QTY of channels	Last channel Limit Brightness Level percent If the first byte = 0,is low limit If the first byte = 1,is high limit	1byte Scope 0~100

Response

Operation Code: **0xF019**		
Target Subnet ID:	Specify subnet ID of target device	1byte, scope 1-254
Target Device ID:	Specify device ID of target device	1byte, scope 1-254
Additional Content		
LEN of additional content:: 1 byte		
Index of Additional Content	**Remark**	**Value**
0	Flag for high limit or low limit or Failure or	1byte 0 = low limit 1= high limit 0xF5 = Failure