FP01 Firmware Rev13 ASCII Command List

12-character ASCII strings (8 characters for v commands). Click a No to jump to the entry in "Command Details". In replies, dddd is the device type and _ is a space character.

No	Category	Send format	Instruction	xxx	Argument	Function	Reply (response_mode=3)
1-1	1. Module settings	mxxxping0000	ping	Module Address	0000 (fixed)	Module presence check	Mxxx0001dddd
1-2	1. Module settings	mxxxlaLLyyyy	la	Module Address	LL=Local Address: 00-63 yyyy=Circuit address to write: 0000-0999	Write a circuit address to a specified Local Address	Mxxx0001dddd
1-3	1. Module settings	mxxxradd0000	radd	Module Address	0000 (fixed)	Read the list of circuit addresses in the module	Mxxx0036dddd + data (12 packets in total)
1-4	1. Module settings	mxxxrggg0000	rggg	Module Address	0000 (fixed)	List the circuits and group registrations in the module	Text (resp=4 only)
1-5	1. Module settings	mxxxgclr0000	gclr	Module Address	0000 (fixed)	Clear the group registrations of the whole module	Mxxx0001dddd
1-6	1. Module settings	mxxxres_0000	res_	Module Address	0000 (fixed)	Reset the module's circuit parameters to defaults	Mxxx0001dddd
1-7	1. Module settings	mxxxoledyyyy	oled	Module Address	yyyy=OLED power: 0000=OFF / other=ON	OLED display ON/OFF	dxxx_____
1-8	1. Module settings	mxxxdireLLPP	dire	Module Address	LL=Local Address: 00-99 PP=Dimming value: 00-99 (99 is treated as 100)	Direct dimming by Local Address (added in Rev13)	No reply
2-1	2. Circuit parameter settings	sxxxwaddyyyy	wadd	Circuit address	yyyy=New circuit address: 0001-0999	Change the circuit address	dxxx_____
2-2	2. Circuit parameter settings	sxxxdisnyyyy	dis	Circuit address	n=Description block number: 0-3 yyyy=Description string (4 characters): 4 ASCII characters	Write the circuit description string	dxxx_____
2-3	2. Circuit parameter settings	sxxxrdis0000	rdis	Circuit address	0000 (fixed)	Read the circuit description string	Text (always)
2-4	2. Circuit parameter settings	sxxxwpolyyyy	wpol	Circuit address	yyyy=Power On Level: 0000-1000	Write the power-on level	Sxxx0001dddd
2-5	2. Circuit parameter settings	sxxxrpol0000	rpol	Circuit address	0000 (fixed)	Read the power-on level	Text (always)
2-6	2. Circuit parameter settings	sxxxwminyyyy	wmin	Circuit address	yyyy=Minimum level (actual level): 0000-1000	Write the minimum level	dxxx_____

No	Category	Send format	Instruction	xxx	Argument	Function	Reply (response_mode=3)
2-7	2. Circuit parameter settings	sxxxrmin0000	rmin	Circuit address	0000 (fixed)	Read the minimum level	Text (always)
2-8	2. Circuit parameter settings	sxxxwmaxyyyy	wmax	Circuit address	yyyy=Maximum level (actual level): 0000-1000	Write the maximum level	dxxx_____
2-9	2. Circuit parameter settings	sxxxrmax0000	rmax	Circuit address	0000 (fixed)	Read the maximum level	Text (always)
2-10	2. Circuit parameter settings	sxxxwfttyyyy	wftt	Circuit address	yyyy=Fade Time (0.1 s units): 0000-0255 (0.0-25.5 s)	Write the Fade Time	dxxx_____
2-11	2. Circuit parameter settings	sxxxrftt0000	rftt	Circuit address	0000 (fixed)	Read the Fade Time	Text (always)
2-12	2. Circuit parameter settings	sxxxwfrryyyy	wfrr	Circuit address	yyyy=Fade Rate: 0000-0255	Write the Fade Rate	dxxx_____
2-13	2. Circuit parameter settings	sxxxrfrr0000	rfrr	Circuit address	0000 (fixed)	Read the Fade Rate	Text (always)
2-14	2. Circuit parameter settings	sxxxwodtyyyy	wodt	Circuit address	yyyy=On Delay Time (0.1 s units): 0000-0255 (0.0-25.5 s)	Write the On Delay Time	dxxx_____
2-15	2. Circuit parameter settings	sxxxrodt0000	rodt	Circuit address	0000 (fixed)	Read the On Delay Time	Text (always)
2-16	2. Circuit parameter settings	sxxxdmxdyyyy	dmxd	Circuit address	yyyy=DMX Driver number: 0001-0004	Write the DMX Driver number	dxxx_____
2-17	2. Circuit parameter settings	sxxxdmxcyyyy	dmxc	Circuit address	yyyy=DMX Channel: 0001-0512	Write the DMX Channel	dxxx_____
3-1	3. Group registration	axxxjoinyyyy	join	Circuit address	yyyy=Group number: 0001-0999	Join a group	Axxx0001dddd / Axxx0001exst / Axxx0001full
3-2	3. Group registration	axxxjoi1yyyy	joi1	Circuit address	yyyy=Group number: 0001-0999	Join only one group	Axxx0001dddd
3-3	3. Group registration	axxxleavyyyy	leav	Circuit address	yyyy=Group number: 0001-0999	Leave a group	Axxx0001dddd / Axxx0001ngrp
3-4	3. Group registration	axxxgclr0000	gclr	Circuit address	0000 (fixed)	Clear all group registrations of the circuit	Axxx0001dddd
3-5	3. Group registration	axxxquergrps	quer	Circuit address	grps=Query item: grps (fixed)	Read the group registrations of the circuit	Axxx0007dddd + data (7 packets in total)
3-6	3. Group registration	gxxxchggyyyy	chgg	Group number	yyyy=New group number: 0001-0999	Renumber a group	Gxxx0001dddd

No	Category	Send format	Instruction	xxx	Argument	Function	Reply (response_mode=3)
4-1	4. Scene table settings	axxxstnnyyyy	st	Circuit address	nn=Scene number: 00-31 yyyy=Scene dimming value: 0000-1000 / m001 (no change)	Write a scene value	Axxx0001dddd / Axxx0001err_
4-2	4. Scene table settings	axxxquersttt	quer	Circuit address	sttt=Query item: sttt (fixed)	Read the scene values of the circuit (32 scenes)	Axxx0012dddd + data (12 packets in total)
4-3	4. Scene table settings	axxxtclr0000	tclr	Circuit address	0000 (fixed)	Reset the scene table of the circuit	Axxx0001LLLL
4-4	4. Scene table settings	mxxxtclr0000	tclr	Module Address	0000 (fixed)	Reset the scene tables of the whole module	Mxxx0001dddd
5-1	5. Circuit dimming control	axxxdireyyyy	dire	Circuit address	yyyy=Logical level: 0000-1000 (0.0-100.0%)	Direct dimming of a circuit	No reply
5-2	5. Circuit dimming control	axxxscccyyyy	sccc	Circuit address	yyyy=Scene number: 0000-0031	Scene recall for a circuit	No reply
5-3	5. Circuit dimming control	axxxfadeyyyy	fade	Circuit address	yyyy=Temporary Fade Time (0.1 s units): 0000-0255	Temporary change of the Fade Time	No reply
5-4	5. Circuit dimming control	axxxidon0000	idon	Circuit address	0000 (fixed)	Start identification blinking	No reply
5-5	5. Circuit dimming control	axxxidof0000	idof	Circuit address	0000 (fixed)	Stop identification blinking	No reply
6-1	6. Group dimming control	gxxxdireyyyy	dire	Group number	yyyy=Logical level: 0000-1000 (0.0-100.0%)	Direct dimming of a group	No reply
6-2	6. Group dimming control	gxxxscccyyyy	sccc	Group number	yyyy=Scene number: 0000-0031	Scene recall for a group	No reply
6-3	6. Group dimming control	gxxxfadeyyyy	fade	Group number	yyyy=Temporary Fade Time (0.1 s units): 0000-0255	Temporary change of the group Fade Time	No reply
6-4	6. Group dimming control	gxxxstmp0000	stmp	Group number	0000 (fixed)	Temporarily save the current levels	No reply
6-5	6. Group dimming control	gxxxltmp0000	ltmp	Group number	0000 (fixed)	Restore the temporarily saved levels	No reply
7-1	7. Volume control (8 characters)	vxxxup__	up__	Group number	—	Raise by Step1	No reply
7-2	7. Volume control (8 characters)	vxxxup_2	up_2	Group number	—	Raise by Step2	No reply
7-3	7. Volume control (8 characters)	vxxxdown	down	Group number	—	Lower by Step1	No reply

No	Category	Send format	Instruction	xxx	Argument	Function	Reply (response_mode=3)
7-4	7. Volume control (8 characters)	`vxxxdn_2`	`dn_2`	Group number	—	Lower by Step2	No reply
7-5	7. Volume control (8 characters)	`vxxxon__`	`on__`	Group number	—	Turn on at the stored level	No reply
7-6	7. Volume control (8 characters)	`vxxxoff_`	`off_`	Group number	—	Store the level and turn off	No reply
7-7	7. Volume control (8 characters)	`vxxxtogg`	`togg`	Group number	—	Toggle on/off	No reply
8-1	8. Status queries	`axxxping0000`	`ping`	Circuit address	0000 (fixed)	Circuit presence check and configuration readout	Axxx0003dddd + data (3 packets in total)
8-2	8. Status queries	`axxxquerdlev`	`quer`	Circuit address	dlev=Query item: dlev (fixed)	Read the current logical level	Axxx0001vvvv
8-3	8. Status queries	`axxxqueralev`	`quer`	Circuit address	alev=Query item: alev (fixed)	Read the current actual level (after scaling)	Axxx0001vvvv
8-4	8. Status queries	`axxxquerslev`	`quer`	Circuit address	slev=Query item: slev (fixed)	Read the Stored Level	Axxx0001vvvv
9-1	9. Settings for all modules	`x000stp1yyyy`	`stp1`	All modules	yyyy=Step1 (logical level): 0000-0255 (0.0-25.5%)	Set UP/DOWN Step1	No reply
9-2	9. Settings for all modules	`x000stp2yyyy`	`stp2`	All modules	yyyy=Step2 (logical level): 0000-0255 (0.0-25.5%)	Set UP/DOWN Step2	No reply
9-3	9. Settings for all modules	`x000wminyyyy`	`wmin`	All modules	yyyy=Minimum level (actual level): 0000-1000	Set the minimum level for all	No reply
9-4	9. Settings for all modules	`x000wmaxyyyy`	`wmax`	All modules	yyyy=Maximum level (actual level): 0000-1000	Set the maximum level for all	No reply
9-5	9. Settings for all modules	`x000wfttyyyy`	`wftt`	All modules	yyyy=Fade Time (0.1 s units): 0000-0255	Set the Fade Time for all	No reply
9-6	9. Settings for all modules	`x000wfrryyyy`	`wfrr`	All modules	yyyy=Fade Rate: 0000-0255	Set the Fade Rate for all	No reply
9-7	9. Settings for all modules	`x000wodtyyyy`	`wodt`	All modules	yyyy=On Delay Time (0.1 s units): 0000-0255	Set the On Delay Time for all	No reply
9-8	9. Settings for all modules	`x000oledyyyy`	`oled`	All modules	yyyy=OLED power: 0000=OFF / other=ON	OLED display ON/OFF for all	No reply
9-9	9. Settings for all modules	`x000respyyyy`	`resp`	All modules	yyyy=Response mode: 0000-0004	Set the response mode (response_mode)	No reply

FP01 Firmware Rev13 ASCII Command Details (VBA/HA mode)

Applies to: FP01 Firmware Rev13 (FIRMWARE_REV "0013"). Replies are shown as the 12-character packets of response_mode=3 (Excel VBA or HA).

0. General information

0-1 Packet structure

Type	Format	Chars	Description
Standard command	`Maaaiiiiyyyy`	12 characters	M=mode character (1), aaa=address/group (3), iiii=instruction (4), yyyy=argument (4)
Volume control	`vgggiiii`	8 characters	v (1), ggg=group (3), iiii=instruction (4)

There is no terminator or checksum. Packets are received in units of 8 characters when the first character is v, and 12 characters when it is x/m/s/t/a/g/d/b. All values are decimal strings (dimming value 0000-1000 = 0.0-100.0%, time in 0.1 s units).

0-2 Mode characters and targets

Mode character	Category	Meaning of xxx	Circuits that execute
`m`	Module	Module Address	The module whose Module Address in EEPROM matches
`s`	Circuit parameter settings	Circuit address	Circuits in the module with the same circuit address
`a`	Circuit control and queries	Circuit address	Circuits in the module with the same circuit address
`g`	Group control	Group number	Circuits where any of the 16 registered group slots matches
`v`	Volume control	Group number	Circuits where any of the 16 registered group slots matches
`x`	All modules	000	All circuits of all modules

0-3 Response mode (response_mode, set with x000respyyyy)

Value	Name	Rev13 behavior
`0`	all silent	No reply (text replies of read commands and st error replies are still sent)
`1`	modules silent	No reply (same as above)
`2`	switch silent	Transmission is started but neither 12-character packets nor text are output
`3`	Excel VBA or HA	Replies with 12-character packets (the reply formats in this document)
`4`	Terminal Software	Replies with text (not covered in this document)

0-4 Common reply formats (response_mode=3)

Type	Format	Description
ACK	`Txxx0001dddd`	T=reply type (M/S/A/G), xxx=address, 0001=packet count, dddd=device type (module_id)
d reply	`dxxx________`	d + 3-character address + 8 spaces (_ is a space)
No reply	–	Control commands (dimming, scene recall, v, x) do not reply

0-5 Device Type (module_id)

Value	Module
`0001`	IGBTX4
`0002`	DIMX4
`0003`	PWMX4
`0004`	RELAYX8
`0005`	RRX8
`0006`	CTRL1
`0007`	RS485X

1. Module settings (m commands)

Only the module whose Module Address (in EEPROM) matches executes the command.

1-1 mxxxping0000 Module presence check

Function	Module presence check				
Send format	**`mxxxping0000` (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	`m`	Mode character (module)	Fixed	1	
	`xxx`	Module Address	001-255	3	
	`ping`	Instruction	Fixed	4	
	`0000`	Fixed value	0000	4	Content is not checked
Operation	The module whose Module Address matches returns an ACK.				
Saved to EEPROM	No				
Reply: on success (ACK)	**`Mxxx0001dddd`**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	`M`	Reply type	Fixed	1	
	`xxx`	Module Address	001-999	3	
	`0001`	Packet count	0001	4	
	`dddd`	Device type (module_id)	0001-0007	4	See the Device Type table in General information
Notes	Use axxxping0000 to read the Firmware Version.				

1-2 mxxxlaLLyyyy Write a circuit address to a specified Local Address

Function	Write a circuit address to a specified Local Address				
Send format	**`mxxxlaLLyyyy` (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**

FP01 Firmware Rev13 ASCII Command Details (VBA/HA mode)

	m	Mode character (module)	Fixed	1	
	xxx	Module Address	001-255	3	
	la	Instruction	Fixed	2	
	LL	Local Address	00-63	2	
	yyyy	Circuit address to write	0000-0999	4	
Operation	Writes the circuit address of the specified local slot to EEPROM and reloads the circuit address array.				
Saved to EEPROM	Yes				
Reply: on success (ACK)	**Mxxx0001dddd**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	M	Reply type	Fixed	1	
	xxx	Module Address	001-999	3	
	0001	Packet count	0001	4	
	dddd	Device type (module_id)	0001-0007	4	See the Device Type table in General information
Notes	Irregular layout: 2-character instruction (la) + 2-digit Local Address.				

1-3 mxxxradd0000 Read the list of circuit addresses in the module

Function	Read the list of circuit addresses in the module				
Send format	**mxxxradd0000 (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	m	Mode character (module)	Fixed	1	
	xxx	Module Address	001-255	3	
	radd	Instruction	Fixed	4	
	0000	Fixed value	0000	4	Content is not checked
Operation	Reads the circuit addresses of Local Addresses 0-31 from EEPROM and sends them three per packet.				
Saved to EEPROM	No				
Reply 1: packet 1 (header)	**Mxxx0036dddd**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	M	Reply type	Fixed	1	
	xxx	Module Address	001-255	3	
	0036	Packet count field	0036 Fixed	4	12 packets are actually sent
	dddd	Device type (module_id)	0001-0007	4	
Reply 2: packets 2-11	**aaaabbbbcccc**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	aaaa	Circuit address (Local 3n)	0000-0999	4	
	bbbb	Circuit address (Local 3n+1)	0000-0999	4	
	cccc	Circuit address (Local 3n+2)	0000-0999	4	
Reply 3: packet 12	**aaaabbbbspce**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	aaaa	Circuit address (Local 30)	0000-0999	4	
	bbbb	Circuit address (Local 31)	0000-0999	4	
	spce	Terminating string	spce	4	
Notes	The packet count field is "0036", but 12 packets are sent including the header (32 entries for Local 0-31).				

1-4 mxxxrggg0000 List the circuits and group registrations in the module

Function	List the circuits and group registrations in the module				
Send format	**mxxxrggg0000 (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	m	Mode character (module)	Fixed	1	
	xxx	Module Address	001-255	3	
	rggg	Instruction	Fixed	4	
	0000	Fixed value	0000	4	Content is not checked
Operation	Loads the group registrations from EEPROM and outputs the list as text only when response_mode=4.				
Saved to EEPROM	No				
Reply: text reply (response_mode=4 only)	**Group registrations per circuit (Terminal display)**				
Notes	No data is sent when response_mode=3.				

1-5 mxxxgclr0000 Clear the group registrations of the whole module

Function	Clear the group registrations of the whole module				
Send format	**mxxxgclr0000 (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	m	Mode character (module)	Fixed	1	
	xxx	Module Address	001-255	3	
	gclr	Instruction	Fixed	4	
	0000	Fixed value	0000	4	Content is not checked
Operation	Sets all 16 group slots of all 64 local slots to 0 in EEPROM.				
Saved to EEPROM	Yes				
Reply: on success (ACK)	**Mxxx0001dddd**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	M	Reply type	Fixed	1	
	xxx	Module Address	001-999	3	

FP01 Firmware Rev13 ASCII Command Details (VBA/HA mode)

	0001	Packet count	0001	4	
	dddd	Device type (module_id)	0001-0007	4	See the Device Type table in General information

1-6 mxxxres_0000 Reset the module's circuit parameters to defaults

Function	Reset the module's circuit parameters to defaults				
Send format	**mxxxres_0000 (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	m	Mode character (module)	Fixed	1	
	xxx	Module Address	001-255	3	
	res_	Instruction	Fixed	4	
	0000	Fixed value	0000	4	Content is not checked
Operation	Sets all 64 local slots to: Power On Level=0, Min=0, Max=1000, Fade Rate=200, Fade Time=0, On Delay=0, Step1/Step2=50, Stored Level=Max.				
Saved to EEPROM	Yes				
Reply: on success (ACK)	**Mxxx0001dddd**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	M	Reply type	Fixed	1	
	xxx	Module Address	001-999	3	
	0001	Packet count	0001	4	
	dddd	Device type (module_id)	0001-0007	4	See the Device Type table in General information
Notes	Group registrations, scene tables and circuit addresses are not reset.				

1-7 mxxxoledyyyy OLED display ON/OFF

Function	OLED display ON/OFF				
Send format	**mxxxoledyyyy (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	m	Mode character (module)	Fixed	1	
	xxx	Module Address	001-255	3	
	oled	Instruction	Fixed	4	
	yyyy	OLED power	0000=OFF / other=ON	4	
Operation	Switches the OLED power-save state and saves the state to EEPROM.				
Saved to EEPROM	Yes				
Reply: on success	**dxxx_____**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	d	Reply type	Fixed	1	
	xxx	Module Address	001-999	3	
	_____	8 spaces	Spaces	8	_ represents a space

1-8 mxxxdireLLPP Direct dimming by Local Address (added in Rev13)

Function	Direct dimming by Local Address (added in Rev13)				
Send format	**mxxxdireLLPP (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	m	Mode character (module)	Fixed	1	
	xxx	Module Address	001-255	3	
	dire	Instruction	Fixed	4	
	LL	Local Address	00-99	2	
	PP	Dimming value	00-99 (99 is treated as 100)	2	
Operation	In the module whose Module Address matches, outputs the specified local circuit at value PP (On Delay, PSoC and DMX are handled as in axxxdire).				
Saved to EEPROM	No				
Reply	No reply				
Notes	Examples from the readme: m001dire0099 sets Local 00 to 100; m001dire0100 sets Local 01 to 0.				

2. Circuit parameter settings (s commands)

Only a circuit whose circuit address exists in the module executes the command. Read commands (r***) reply with text regardless of response_mode.

2-1 sxxxwaddyyyy Change the circuit address

Function	Change the circuit address				
Send format	**sxxxwaddyyyy (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	s	Mode character (circuit settings)	Fixed	1	
	xxx	Circuit address	001-999	3	
	wadd	Instruction	Fixed	4	
	yyyy	New circuit address	0001-0999	4	
Operation	Changes the circuit address of circuit xxx to yyyy and reloads the circuit address array.				
Saved to EEPROM	Yes				
Reply: on success	**dxxx_____**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	d	Reply type	Fixed	1	
	xxx	Circuit address	001-999	3	
	_____	8 spaces	Spaces	8	_ represents a space

FP01 Firmware Rev13 ASCII Command Details (VBA/HA mode)

Notes	xxx in the reply is the circuit address before the change.

2-2 sxxxdisnyyyy Write the circuit description string

Function	Write the circuit description string				
Send format	**sxxxdisnyyyy (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	s	Mode character (circuit settings)	Fixed	1	
	xxx	Circuit address	001-999	3	
	dis	Instruction	Fixed	3	
	n	Description block number	0-3	1	
	yyyy	Description string (4 characters)	4 ASCII characters	4	
Operation	Writes yyyy to block n of the description string (16 characters = 4 characters x 4 blocks).				
Saved to EEPROM	Yes				
Reply: on success	**dxxx_____**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	d	Reply type	Fixed	1	
	xxx	Circuit address	001-999	3	
	_____	8 spaces	Spaces	8	_ represents a space
Notes	3-character instruction (dis) + 1-digit block number.				

2-3 sxxxrdis0000 Read the circuit description string

Function	Read the circuit description string				
Send format	**sxxxrdis0000 (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	s	Mode character (circuit settings)	Fixed	1	
	xxx	Circuit address	001-999	3	
	rdis	Instruction	Fixed	4	
	0000	Fixed value	0000	4	Content is not checked
Operation	Reads the description string from EEPROM and sends it as text. Non-printable characters are replaced with spaces.				
Saved to EEPROM	No				
Reply: text reply (all modes)	**Address: xxx / Descript : / description 12 chars / description 4 chars + 6 spaces<CR><LF>**				

2-4 sxxxwpolyyyy Write the power-on level

Function	Write the power-on level				
Send format	**sxxxwpolyyyy (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	s	Mode character (circuit settings)	Fixed	1	
	xxx	Circuit address	001-999	3	
	wpol	Instruction	Fixed	4	
	yyyy	Power On Level	0000-1000	4	
Operation	Saves the Power On Level to EEPROM.				
Saved to EEPROM	Yes				
Reply: on success (ACK)	**Sxxx0001dddd**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	S	Reply type	Fixed	1	
	xxx	Circuit address	001-999	3	
	0001	Packet count	0001	4	
	dddd	Device type (module_id)	0001-0007	4	See the Device Type table in General information

2-5 sxxxrpol0000 Read the power-on level

Function	Read the power-on level				
Send format	**sxxxrpol0000 (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	s	Mode character (circuit settings)	Fixed	1	
	xxx	Circuit address	001-999	3	
	rpol	Instruction	Fixed	4	
	0000	Fixed value	0000	4	Content is not checked
Operation	Reads the Power On Level from EEPROM and sends it as text.				
Saved to EEPROM	No				
Reply: text reply (all modes)	**ADDRESS= xxx / POWER ON LEVEL = yyyy % <CR><LF>**				

2-6 sxxxwminyyyy Write the minimum level

Function	Write the minimum level				
Send format	**sxxxwminyyyy (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	s	Mode character (circuit settings)	Fixed	1	
	xxx	Circuit address	001-999	3	
	wmin	Instruction	Fixed	4	
	yyyy	Minimum level (actual level)	0000-1000	4	
Operation	Saves the minimum level to EEPROM and regenerates the dimming scaling table.				
Saved to EEPROM	Yes				

FP01 Firmware Rev13 ASCII Command Details (VBA/HA mode)

Reply: on success	`dxxx_____`				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	d	Reply type	Fixed	1	
	xxx	Circuit address	001-999	3	
	_____	8 spaces	Spaces	8	_ represents a space

2-7 sxxxrmin0000 Read the minimum level

Function	Read the minimum level				
Send format	**`sxxxrmin0000 (12 chars)`**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	s	Mode character (circuit settings)	Fixed	1	
	xxx	Circuit address	001-999	3	
	rmin	Instruction	Fixed	4	
	0000	Fixed value	0000	4	Content is not checked
Operation	Reads the minimum level from EEPROM and sends it as text.				
Saved to EEPROM	No				
Reply: text reply (all modes)	**`READING FROM EEPROM  <CR><LF> / ADDRESS= xxx / MINLevel=yyyy  <CR><LF>`**				

2-8 sxxxwmaxyyyy Write the maximum level

Function	Write the maximum level				
Send format	**`sxxxwmaxyyyy (12 chars)`**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	s	Mode character (circuit settings)	Fixed	1	
	xxx	Circuit address	001-999	3	
	wmax	Instruction	Fixed	4	
	yyyy	Maximum level (actual level)	0000-1000	4	
Operation	Saves the maximum level to EEPROM and regenerates the dimming scaling table.				
Saved to EEPROM	Yes				
Reply: on success	`dxxx_____`				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	d	Reply type	Fixed	1	
	xxx	Circuit address	001-999	3	
	_____	8 spaces	Spaces	8	_ represents a space

2-9 sxxxrmax0000 Read the maximum level

Function	Read the maximum level				
Send format	**`sxxxrmax0000 (12 chars)`**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	s	Mode character (circuit settings)	Fixed	1	
	xxx	Circuit address	001-999	3	
	rmax	Instruction	Fixed	4	
	0000	Fixed value	0000	4	Content is not checked
Operation	Reads the maximum level from EEPROM and sends it as text.				
Saved to EEPROM	No				
Reply: text reply (all modes)	**`READING FROM EEPROM  <CR><LF> / ADDRESS= xxx / MAXLevel=yyyy  <CR><LF>`**				

2-10 sxxxwfttyyyy Write the Fade Time

Function	Write the Fade Time				
Send format	**`sxxxwfttyyyy (12 chars)`**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	s	Mode character (circuit settings)	Fixed	1	
	xxx	Circuit address	001-999	3	
	wftt	Instruction	Fixed	4	
	yyyy	Fade Time (0.1 s units)	0000-0255 (0.0-25.5 s)	4	
Operation	Saves the Fade Time to EEPROM and RAM, and also sets it in the PSoC for Local 0-7.				
Saved to EEPROM	Yes				
Reply: on success	`dxxx_____`				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	d	Reply type	Fixed	1	
	xxx	Circuit address	001-999	3	
	_____	8 spaces	Spaces	8	_ represents a space
Notes	Stored in EEPROM as 1 byte.				

2-11 sxxxrftt0000 Read the Fade Time

Function	Read the Fade Time				
Send format	**`sxxxrftt0000 (12 chars)`**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	s	Mode character (circuit settings)	Fixed	1	
	xxx	Circuit address	001-999	3	
	rftt	Instruction	Fixed	4	
	0000	Fixed value	0000	4	Content is not checked
Operation	Reads the Fade Time from EEPROM, updates RAM and sends it as text.				
Saved to EEPROM	No				

FP01 Firmware Rev13 ASCII Command Details (VBA/HA mode)

Reply: text reply (all modes)	`READING FROM EEPROM  <CR><LF> / ADDRESS= xxx / FADETIME=yyyy  <CR><LF>`

2-12 sxxxwfrryyyy Write the Fade Rate

Function	Write the Fade Rate				
Send format	`sxxxwfrryyyy (12 chars)`				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	s	Mode character (circuit settings)	Fixed	1	
	xxx	Circuit address	001-999	3	
	wfrr	Instruction	Fixed	4	
	yyyy	Fade Rate	0000-0255	4	
Operation	Saves the Fade Rate to EEPROM.				
Saved to EEPROM	Yes				
Reply: on success	`dxxx_____`				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	d	Reply type	Fixed	1	
	xxx	Circuit address	001-999	3	
	_____	8 spaces	Spaces	8	_ represents a space
Notes	From Rev10 on, the PSoC Dimmer does not use the Fade Rate (comment in the code).				

2-13 sxxxrfrr0000 Read the Fade Rate

Function	Read the Fade Rate				
Send format	`sxxxrfrr0000 (12 chars)`				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	s	Mode character (circuit settings)	Fixed	1	
	xxx	Circuit address	001-999	3	
	rfrr	Instruction	Fixed	4	
	0000	Fixed value	0000	4	Content is not checked
Operation	Reads the Fade Rate from EEPROM and sends it as text.				
Saved to EEPROM	No				
Reply: text reply (all modes)	`READING FROM EEPROM  <CR><LF> / ADDRESS= xxx / FADERATE=yyyy  <CR><LF>`				

2-14 sxxxwodtyyyy Write the On Delay Time

Function	Write the On Delay Time				
Send format	`sxxxwodtyyyy (12 chars)`				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	s	Mode character (circuit settings)	Fixed	1	
	xxx	Circuit address	001-999	3	
	wodt	Instruction	Fixed	4	
	yyyy	On Delay Time (0.1 s units)	0000-0255 (0.0-25.5 s)	4	
Operation	Saves the On Delay Time to EEPROM and RAM. The circuit waits this long before outputting a turn-on (level > 0).				
Saved to EEPROM	Yes				
Reply: on success	`dxxx_____`				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	d	Reply type	Fixed	1	
	xxx	Circuit address	001-999	3	
	_____	8 spaces	Spaces	8	_ represents a space

2-15 sxxxrodt0000 Read the On Delay Time

Function	Read the On Delay Time				
Send format	`sxxxrodt0000 (12 chars)`				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	s	Mode character (circuit settings)	Fixed	1	
	xxx	Circuit address	001-999	3	
	rodt	Instruction	Fixed	4	
	0000	Fixed value	0000	4	Content is not checked
Operation	Reads the On Delay Time from EEPROM, updates RAM and sends it as text.				
Saved to EEPROM	No				
Reply: text reply (all modes)	`READING FROM EEPROM  <CR><LF> / ADDRESS= xxx /ONTIMEDLY=yyyy  <CR><LF>`				

2-16 sxxxdmxdyyyy Write the DMX Driver number

Function	Write the DMX Driver number				
Send format	`sxxxdmxdyyyy (12 chars)`				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	s	Mode character (circuit settings)	Fixed	1	
	xxx	Circuit address	001-999	3	
	dmxd	Instruction	Fixed	4	
	yyyy	DMX Driver number	0001-0004	4	
Operation	Saves the DMX Driver number to EEPROM. Output is sent to the I2C DMX driver with this number.				
Saved to EEPROM	Yes				
Reply: on success	`dxxx_____`				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	d	Reply type	Fixed	1	

	xxx	Circuit address	001-999	3	
	_____	8 spaces	Spaces	8	_ represents a space

2-17 sxxxdmxcyyyy Write the DMX Channel

Function	Write the DMX Channel				
Send format	**sxxxdmxcyyyy (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	s	Mode character (circuit settings)	Fixed	1	
	xxx	Circuit address	001-999	3	
	dmxc	Instruction	Fixed	4	
	yyyy	DMX Channel	0001-0512	4	
Operation	Saves the DMX Channel to EEPROM.				
Saved to EEPROM	Yes				
Reply: on success	**dxxx_____**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	d	Reply type	Fixed	1	
	xxx	Circuit address	001-999	3	
	_____	8 spaces	Spaces	8	_ represents a space
Notes	The range is not checked when writing (the ping reply returns values above 512 as 0000).				

3. Group registration (a/g commands)

Up to 16 groups can be registered per circuit (16 EEPROM slots).

3-1 axxxjoinyyyy Join a group

Function	Join a group				
Send format	**axxxjoinyyyy (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	a	Mode character (circuit control)	Fixed	1	
	xxx	Circuit address	001-999	3	
	join	Instruction	Fixed	4	
	yyyy	Group number	0001-0999	4	
Operation	Checks the 16 slots for a free slot and duplicates, registers yyyy in the first free slot and saves it to EEPROM.				
Saved to EEPROM	Yes				
Reply 1: on success (ACK)	**Axxx0001dddd**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	A	Reply type	Fixed	1	
	xxx	Circuit address	001-999	3	
	0001	Packet count	0001	4	
	dddd	Device type (module_id)	0001-0007	4	See the Device Type table in General information
Reply 2: on error (group already registered)	**Axxx0001exst**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	A	Reply type	Fixed	1	
	xxx	Circuit address	001-999	3	
	0001	Packet count	0001	4	
	exst	Error string	exst	4	
Reply 3: on error (all 16 slots in use)	**Axxx0001full**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	A	Reply type	Fixed	1	
	xxx	Circuit address	001-999	3	
	0001	Packet count	0001	4	
	full	Error string	full	4	

3-2 axxxjoi1yyyy Join only one group

Function	Join only one group				
Send format	**axxxjoi1yyyy (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	a	Mode character (circuit control)	Fixed	1	
	xxx	Circuit address	001-999	3	
	joi1	Instruction	Fixed	4	
	yyyy	Group number	0001-0999	4	
Operation	Clears all 16 slots and registers only yyyy in the first slot.				
Saved to EEPROM	Yes				
Reply: on success (ACK)	**Axxx0001dddd**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	A	Reply type	Fixed	1	
	xxx	Circuit address	001-999	3	
	0001	Packet count	0001	4	
	dddd	Device type (module_id)	0001-0007	4	See the Device Type table in General information

FP01 Firmware Rev13 ASCII Command Details (VBA/HA mode)

3-3 axxxleavyyyy Leave a group

Function	Leave a group				
Send format	**axxxleavyyyy (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	a	Mode character (circuit control)	Fixed	1	
	xxx	Circuit address	001-999	3	
	leav	Instruction	Fixed	4	
	yyyy	Group number	0001-0999	4	
Operation	Sets the slot holding yyyy to 0 and saves it to EEPROM.				
Saved to EEPROM	Yes				
Reply 1: on success (ACK)	**Axxx0001dddd**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	A	Reply type	Fixed	1	
	xxx	Circuit address	001-999	3	
	0001	Packet count	0001	4	
	dddd	Device type (module_id)	0001-0007	4	See the Device Type table in General information
Reply 2: on error (group not registered)	**Axxx0001ngrp**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	A	Reply type	Fixed	1	
	xxx	Circuit address	001-999	3	
	0001	Packet count	0001	4	
	ngrp	Error string	ngrp	4	

3-4 axxxgclr0000 Clear all group registrations of the circuit

Function	Clear all group registrations of the circuit				
Send format	**axxxgclr0000 (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	a	Mode character (circuit control)	Fixed	1	
	xxx	Circuit address	001-999	3	
	gclr	Instruction	Fixed	4	
	0000	Fixed value	0000	4	Content is not checked
Operation	Sets all 16 slots of the circuit to 0 (RAM and EEPROM).				
Saved to EEPROM	Yes				
Reply: on success (ACK)	**Axxx0001dddd**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	A	Reply type	Fixed	1	
	xxx	Circuit address	001-999	3	
	0001	Packet count	0001	4	
	dddd	Device type (module_id)	0001-0007	4	See the Device Type table in General information

3-5 axxxquergrps Read the group registrations of the circuit

Function	Read the group registrations of the circuit				
Send format	**axxxquergrps (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	a	Mode character (circuit control)	Fixed	1	
	xxx	Circuit address	001-999	3	
	quer	Instruction	Fixed	4	
	grps	Query item	grps (fixed)	4	
Operation	Sends the group numbers of the 16 slots three per packet. Values outside 0-1000 are sent as 0.				
Saved to EEPROM	No				
Reply 1: packet 1 (header)	**Axxx0007dddd**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	A	Reply type	Fixed	1	
	xxx	Circuit address	001-999	3	
	0007	Packet count	0007	4	
	dddd	Device type (module_id)	0001-0007	4	
Reply 2: packets 2-6	**ggggggggggg**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	gggg x3	Group numbers (slots 1-15, three per packet)	0000-0999	12	
Reply 3: packet 7	**ggggspcespce**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	gggg	Group number (slot 16)	0000-0999	4	
	spcespce	Terminating string	spcespce	8	

3-6 gxxxchggyyyy Renumber a group

Function	Renumber a group				
Send format	**gxxxchggyyyy (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	g	Mode character (group control)	Fixed	1	

FP01 Firmware Rev13 ASCII Command Details (VBA/HA mode)

	xxx	Group number	001-999	3	000 is not processed
	chgg	Instruction	Fixed	4	
	yyyy	New group number	0001-0999	4	
Operation	Changes the slots holding group xxx to yyyy and saves them to EEPROM.				
Saved to EEPROM	Yes				
Reply: on success (ACK)	**Gxxx0001dddd**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	G	Reply type	Fixed	1	
	xxx	Group number	001-999	3	
	0001	Packet count	0001	4	
	dddd	Device type (module_id)	0001-0007	4	See the Device Type table in General information

4. Scene table settings (a/m commands)

32 scenes per circuit (Scene 0-31). The value -1 (sent as m001) means "no change".

4-1 axxxstnnyyyy Write a scene value

Function	Write a scene value				
Send format	**axxxstnnyyyy (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	a	Mode character (circuit control)	Fixed	1	
	xxx	Circuit address	001-999	3	
	st	Instruction	Fixed	2	
	nn	Scene number	00-31	2	
	yyyy	Scene dimming value	0000-1000 / m001 (no change)	4	
Operation	Saves the value of scene nn. If the dimming value is out of range, the scene is set to -1 (no change) and an error is returned.				
Saved to EEPROM	Yes				
Reply 1: on success (ACK)	**Axxx0001dddd**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	A	Reply type	Fixed	1	
	xxx	Circuit address	001-999	3	
	0001	Packet count	0001	4	
	dddd	Device type (module_id)	0001-0007	4	See the Device Type table in General information
Reply 2: on error (scene number or dimming value out of range)	**Axxx0001err_**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	A	Reply type	Fixed	1	
	xxx	Circuit address	001-999	3	
	0001	Packet count	0001	4	
	err_	Error string	err_	4	No error number is appended
Notes	Error replies are sent regardless of response_mode.				

4-2 axxxquersttt Read the scene values of the circuit (32 scenes)

Function	Read the scene values of the circuit (32 scenes)				
Send format	**axxxquersttt (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	a	Mode character (circuit control)	Fixed	1	
	xxx	Circuit address	001-999	3	
	quer	Instruction	Fixed	4	
	sttt	Query item	sttt (fixed)	4	
Operation	Sends the 32 scene values three per packet. Values outside 0-1000 (no change) are shown as m001.				
Saved to EEPROM	No				
Reply 1: packet 1 (header)	**Axxx0012dddd**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	A	Reply type	Fixed	1	
	xxx	Circuit address	001-999	3	
	0012	Packet count	0012	4	
	dddd	Device type (module_id)	0001-0007	4	
Reply 2: packets 2-11	**ssssssssssss**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	ssss x3	Scene values (Scene 0-29, three per packet)	0000-1000 / m001	12	
Reply 3: packet 12	**ssssssss0000**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	ssss x2	Scene values (Scene 30 and 31)	0000-1000 / m001	8	
	0000	Fixed value	0000	4	

4-3 axxxtclr0000 Reset the scene table of the circuit

Function	Reset the scene table of the circuit
Send format	**axxxtclr0000 (12 chars)**

FP01 Firmware Rev13 ASCII Command Details (VBA/HA mode)

	Field	Description	Range	Chars	Remarks
	a	Mode character (circuit control)	Fixed	1	
	xxx	Circuit address	001-999	3	
	tclr	Instruction	Fixed	4	
	0000	Fixed value	0000	4	Content is not checked
Operation	Sets Scene 0 = 0 and Scene 1-31 = 1000 and saves them to EEPROM.				
Saved to EEPROM	Yes				
Reply: on success	**Axxx0001LLLL**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	A	Reply type	Fixed	1	
	xxx	Circuit address	001-999	3	
	0001	Packet count	0001	4	
	LLLL	Local Address	0000-0063	4	

4-4 mxxxtclr0000 Reset the scene tables of the whole module

Function	Reset the scene tables of the whole module				
Send format	**mxxxtclr0000 (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	m	Mode character (module)	Fixed	1	
	xxx	Module Address	001-255	3	
	tclr	Instruction	Fixed	4	
	0000	Fixed value	0000	4	Content is not checked
Operation	Sets Scene 0 = 0 and Scene 1-31 = 1000 for all 64 local slots and saves them to EEPROM.				
Saved to EEPROM	Yes				
Reply: on success (ACK)	**Mxxx0001dddd**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	M	Reply type	Fixed	1	
	xxx	Module Address	001-999	3	
	0001	Packet count	0001	4	
	dddd	Device type (module_id)	0001-0007	4	See the Device Type table in General information
Notes	The Module Address is checked against module_address in RAM (other m commands check the EEPROM value).				

5. Circuit dimming control (a commands)

Logical level 0000-1000 (0.0-100.0%). Local Addresses 0-7 are output to the PSoC and DMX through the scaling table; 8 and above are output directly to DMX.

5-1 axxxdireyyyy Direct dimming of a circuit

Function	Direct dimming of a circuit				
Send format	**axxxdireyyyy (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	a	Mode character (circuit control)	Fixed	1	
	xxx	Circuit address	001-999	3	
	dire	Instruction	Fixed	4	
	yyyy	Logical level	0000-1000 (0.0-100.0%)	4	
Operation	Limits the value to 0-1000 and outputs the scaled value. When the level is > 0, the output waits for the On Delay Time.				
Saved to EEPROM	No				
Reply	No reply				

5-2 axxxscccyyyy Scene recall for a circuit

Function	Scene recall for a circuit				
Send format	**axxxscccyyyy (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	a	Mode character (circuit control)	Fixed	1	
	xxx	Circuit address	001-999	3	
	sccc	Instruction	Fixed	4	
	yyyy	Scene number	0000-0031	4	
Operation	Sets the scene value as the current level and outputs it. Does nothing when the scene value is -1 (no change) or out of range.				
Saved to EEPROM	No				
Reply	No reply				

5-3 axxxfadeyyyy Temporary change of the Fade Time

Function	Temporary change of the Fade Time				
Send format	**axxxfadeyyyy (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	a	Mode character (circuit control)	Fixed	1	
	xxx	Circuit address	001-999	3	
	fade	Instruction	Fixed	4	
	yyyy	Temporary Fade Time (0.1 s units)	0000-0255	4	
Operation	Limits the value to 0-255 and sets it in RAM and the PSoC. Not saved to EEPROM.				
Saved to EEPROM	No				
Reply	No reply				

FP01 Firmware Rev13 ASCII Command Details (VBA/HA mode)

5-4 axxxidon0000 Start identification blinking

Function	Start identification blinking				
Send format	**axxxidon0000 (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	a	Mode character (circuit control)	Fixed	1	
	xxx	Circuit address	001-999	3	
	idon	Instruction	Fixed	4	
	0000	Fixed value	0000	4	Content is not checked
Operation	Sets the PSoC Fade Time to 15 and makes the circuit blink.				
Saved to EEPROM	No				
Reply	No reply				

5-5 axxxidof0000 Stop identification blinking

Function	Stop identification blinking				
Send format	**axxxidof0000 (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	a	Mode character (circuit control)	Fixed	1	
	xxx	Circuit address	001-999	3	
	idof	Instruction	Fixed	4	
	0000	Fixed value	0000	4	Content is not checked
Operation	Stops blinking and sets the circuit output to 0.				
Saved to EEPROM	No				
Reply	No reply				

6. Group dimming control (g commands)

Applies to all circuits where any of the 16 registered group slots matches.

6-1 gxxxdireyyyy Direct dimming of a group

Function	Direct dimming of a group				
Send format	**gxxxdireyyyy (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	g	Mode character (group control)	Fixed	1	
	xxx	Group number	001-999	3	000 is not processed
	dire	Instruction	Fixed	4	
	yyyy	Logical level	0000-1000 (0.0-100.0%)	4	
Operation	Outputs all member circuits at the level limited to 0-1000. The On Delay Time is applied.				
Saved to EEPROM	No				
Reply	No reply				

6-2 gxxxscccyyyy Scene recall for a group

Function	Scene recall for a group				
Send format	**gxxxscccyyyy (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	g	Mode character (group control)	Fixed	1	
	xxx	Group number	001-999	3	000 is not processed
	sccc	Instruction	Fixed	4	
	yyyy	Scene number	0000-0031	4	
Operation	Outputs the scene value of each member circuit. Circuits whose scene value is -1 (no change) do not change.				
Saved to EEPROM	No				
Reply	No reply				
Notes	Motion sensors send sccc 0003 (detected) / 0002 (confirmation) / 0001 (not detected).				

6-3 gxxxfadeyyyy Temporary change of the group Fade Time

Function	Temporary change of the group Fade Time				
Send format	**gxxxfadeyyyy (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	g	Mode character (group control)	Fixed	1	
	xxx	Group number	001-999	3	000 is not processed
	fade	Instruction	Fixed	4	
	yyyy	Temporary Fade Time (0.1 s units)	0000-0255	4	
Operation	Sets the Fade Time of all member circuits in RAM and the PSoC. Not saved to EEPROM.				
Saved to EEPROM	No				
Reply	No reply				

6-4 gxxxstmp0000 Temporarily save the current levels

Function	Temporarily save the current levels				
Send format	**gxxxstmp0000 (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	g	Mode character (group control)	Fixed	1	
	xxx	Group number	001-999	3	000 is not processed
	stmp	Instruction	Fixed	4	
	0000	Fixed value	0000	4	Content is not checked
Operation	Saves the current level of each member circuit to RAM (tmp_level).				
Saved to EEPROM	No (RAM)				

FP01 Firmware Rev13 ASCII Command Details (VBA/HA mode)

Reply	No reply
Notes	Lost when the power is turned off.

6-5 gxxxltmp0000 Restore the temporarily saved levels

Function	Restore the temporarily saved levels				
Send format	**gxxxltmp0000 (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	g	Mode character (group control)	Fixed	1	
	xxx	Group number	001-999	3	000 is not processed
	ltmp	Instruction	Fixed	4	
	0000	Fixed value	0000	4	Content is not checked
Operation	Sets the tmp_level value as the current level and outputs it (DMX Fade Time is 0).				
Saved to EEPROM	No				
Reply	No reply				

7. Volume control (8 characters) (v commands)

8-character packets for control from rotary encoders and switches. Output uses a fixed Fade Time of 2 (0.2 s).

7-1 vxxxup__ Raise by Step1

Function	Raise by Step1				
Send format	**vxxxup__ (8 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	v	Mode character (volume)	Fixed	1	
	xxx	Group number	001-999	3	000 is not processed
	up__	Instruction	Fixed	4	
Operation	Raises lit member circuits by Step1 (upper limit 1000).				
Saved to EEPROM	No				
Reply	No reply				

7-2 vxxxup_2 Raise by Step2

Function	Raise by Step2				
Send format	**vxxxup_2 (8 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	v	Mode character (volume)	Fixed	1	
	xxx	Group number	001-999	3	000 is not processed
	up_2	Instruction	Fixed	4	
Operation	Raises lit member circuits by Step2 (upper limit 1000).				
Saved to EEPROM	No				
Reply	No reply				

7-3 vxxxdown Lower by Step1

Function	Lower by Step1				
Send format	**vxxxdown (8 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	v	Mode character (volume)	Fixed	1	
	xxx	Group number	001-999	3	000 is not processed
	down	Instruction	Fixed	4	
Operation	Lowers lit member circuits by Step1. The lower limit is 1; circuits are not turned off.				
Saved to EEPROM	No				
Reply	No reply				

7-4 vxxxdn_2 Lower by Step2

Function	Lower by Step2				
Send format	**vxxxdn_2 (8 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	v	Mode character (volume)	Fixed	1	
	xxx	Group number	001-999	3	000 is not processed
	dn_2	Instruction	Fixed	4	
Operation	Lowers lit member circuits by Step2. The lower limit is 1; circuits are not turned off.				
Saved to EEPROM	No				
Reply	No reply				

7-5 vxxxon__ Turn on at the stored level

Function	Turn on at the stored level				
Send format	**vxxxon__ (8 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	v	Mode character (volume)	Fixed	1	
	xxx	Group number	001-999	3	000 is not processed
	on__	Instruction	Fixed	4	
Operation	Turns on at the Stored Level in EEPROM (limited to 0-1000). The On Delay Time is applied.				
Saved to EEPROM	No				
Reply	No reply				

7-6 vxxxoff_ Store the level and turn off

Function	Store the level and turn off

FP01 Firmware Rev13 ASCII Command Details (VBA/HA mode)

Send format	**vxxxoff_ (8 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	v	Mode character (volume)	Fixed	1	
	xxx	Group number	001-999	3	000 is not processed
	off_	Instruction	Fixed	4	
Operation	Circuits whose current level is above 0 save it as the Stored Level and are then set to 0.				
Saved to EEPROM	Yes (Stored Level)				
Reply	No reply				

7-7 vxxxtogg Toggle on/off

Function	Toggle on/off				
Send format	**vxxxtogg (8 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	v	Mode character (volume)	Fixed	1	
	xxx	Group number	001-999	3	000 is not processed
	togg	Instruction	Fixed	4	
Operation	When lit, saves the level as the Stored Level and turns off; when off, turns on at the Stored Level.				
Saved to EEPROM	Yes (Stored Level)				
Reply	No reply				

8. Status queries (a commands)

Replies with 12-character packets when response_mode=3.

8-1 axxxping0000 Circuit presence check and configuration readout

Function	Circuit presence check and configuration readout				
Send format	**axxxping0000 (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	a	Mode character (circuit control)	Fixed	1	
	xxx	Circuit address	001-999	3	
	ping	Instruction	Fixed	4	
	0000	Fixed value	0000	4	Content is not checked
Operation	Sends the Module Address, Local Address, DMX settings and Firmware Rev of the circuit in 3 packets.				
Saved to EEPROM	No				
Reply 1: packet 1	**Axxx0003dddd**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	A	Reply type	Fixed	1	
	xxx	Circuit address	001-999	3	
	0003	Packet count	0003	4	
	dddd	Device type (module_id)	0001-0007	4	
Reply 2: packet 2	**yyyyzzzznnnn**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	yyyy	Module Address	0001-0255	4	
	zzzz	Local Address	0000-0063	4	
	nnnn	DMX Driver number	0001-0004	4	
Reply 3: packet 3	**ttttvvvvnUSE**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	tttt	DMX Channel	0000-0512	4	Values above 512 are 0000
	vvvv	Firmware Rev	0013	4	
	nUSE	Fixed string	nUSE	4	

8-2 axxxquerdlev Read the current logical level

Function	Read the current logical level				
Send format	**axxxquerdlev (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	a	Mode character (circuit control)	Fixed	1	
	xxx	Circuit address	001-999	3	
	quer	Instruction	Fixed	4	
	dlev	Query item	dlev (fixed)	4	
Operation	Sends the current logical level (current_level).				
Saved to EEPROM	No				
Reply: on success	**Axxx0001vvvv**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	A	Reply type	Fixed	1	
	xxx	Circuit address	001-999	3	
	0001	Packet count	0001	4	
	vvvv	Logical level	0000-1000	4	

8-3 axxxqueralev Read the current actual level (after scaling)

Function	Read the current actual level (after scaling)				
Send format	**axxxqueralev (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	a	Mode character (circuit control)	Fixed	1	
	xxx	Circuit address	001-999	3	
	quer	Instruction	Fixed	4	
	alev	Query item	alev (fixed)	4	

FP01 Firmware Rev13 ASCII Command Details (VBA/HA mode)

Operation	Sends the actual output level after the scaling table.				
Saved to EEPROM	No				
Reply: on success	**Axxx0001vvvv**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	A	Reply type	Fixed	1	
	xxx	Circuit address	001-999	3	
	0001	Packet count	0001	4	
	vvvv	Actual level	0000-1000	4	

8-4 axxxquerslev Read the Stored Level

Function	Read the Stored Level				
Send format	**axxxquerslev (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	a	Mode character (circuit control)	Fixed	1	
	xxx	Circuit address	001-999	3	
	quer	Instruction	Fixed	4	
	slev	Query item	slev (fixed)	4	
Operation	Sends the Stored Level in EEPROM (the level used by on__).				
Saved to EEPROM	No				
Reply: on success	**Axxx0001vvvv**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	A	Reply type	Fixed	1	
	xxx	Circuit address	001-999	3	
	0001	Packet count	0001	4	
	vvvv	Stored Level	0000-1000	4	

9. Settings for all modules (x commands)

Starts with x000. Applies to all modules and all 64 local slots; there is no reply.

9-1 x000stp1yyyy Set UP/DOWN Step1

Function	Set UP/DOWN Step1				
Send format	**x000stp1yyyy (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	x	Mode character (all modules)	Fixed	1	
	000	All modules	000	3	Content is not checked
	stp1	Instruction	Fixed	4	
	yyyy	Step1 (logical level)	0000-0255 (0.0-25.5%)	4	
Operation	Saves Step1 of all circuits to EEPROM. Used by v up__ / down.				
Saved to EEPROM	Yes				
Reply	No reply				
Notes	Steps are stored in EEPROM as 1 byte, so values of 256 or more keep only the lower 8 bits.				

9-2 x000stp2yyyy Set UP/DOWN Step2

Function	Set UP/DOWN Step2				
Send format	**x000stp2yyyy (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	x	Mode character (all modules)	Fixed	1	
	000	All modules	000	3	Content is not checked
	stp2	Instruction	Fixed	4	
	yyyy	Step2 (logical level)	0000-0255 (0.0-25.5%)	4	
Operation	Saves Step2 of all circuits to EEPROM. Used by v up_2 / dn_2.				
Saved to EEPROM	Yes				
Reply	No reply				
Notes	Steps are stored in EEPROM as 1 byte, so values of 256 or more keep only the lower 8 bits.				

9-3 x000wminyyyy Set the minimum level for all

Function	Set the minimum level for all				
Send format	**x000wminyyyy (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	x	Mode character (all modules)	Fixed	1	
	000	All modules	000	3	Content is not checked
	wmin	Instruction	Fixed	4	
	yyyy	Minimum level (actual level)	0000-1000	4	
Operation	Saves the minimum level of all circuits to EEPROM and regenerates the scaling table.				
Saved to EEPROM	Yes				
Reply	No reply				

9-4 x000wmaxyyyy Set the maximum level for all

Function	Set the maximum level for all				
Send format	**x000wmaxyyyy (12 chars)**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	x	Mode character (all modules)	Fixed	1	
	000	All modules	000	3	Content is not checked
	wmax	Instruction	Fixed	4	
	yyyy	Maximum level (actual level)	0000-1000	4	

FP01 Firmware Rev13 ASCII Command Details (VBA/HA mode)

Operation	Saves the maximum level of all circuits to EEPROM and regenerates the scaling table.
Saved to EEPROM	Yes
Reply	No reply

9-5 x000wfttyyyy Set the Fade Time for all

Function	Set the Fade Time for all				
Send format	**`x000wfttyyyy (12 chars)`**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	x	Mode character (all modules)	Fixed	1	
	`000`	All modules	000	3	Content is not checked
	`wftt`	Instruction	Fixed	4	
	yyyy	Fade Time (0.1 s units)	0000-0255	4	
Operation	Saves the Fade Time of all circuits to EEPROM and RAM, and also sets it in the PSoC for Local 0-7.				
Saved to EEPROM	Yes				
Reply	No reply				

9-6 x000wfrryyyy Set the Fade Rate for all

Function	Set the Fade Rate for all				
Send format	**`x000wfrryyyy (12 chars)`**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	x	Mode character (all modules)	Fixed	1	
	`000`	All modules	000	3	Content is not checked
	`wfrr`	Instruction	Fixed	4	
	yyyy	Fade Rate	0000-0255	4	
Operation	Saves the Fade Rate of all circuits to EEPROM (not used by the PSoC Dimmer).				
Saved to EEPROM	Yes				
Reply	No reply				

9-7 x000wodtyyyy Set the On Delay Time for all

Function	Set the On Delay Time for all				
Send format	**`x000wodtyyyy (12 chars)`**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	x	Mode character (all modules)	Fixed	1	
	`000`	All modules	000	3	Content is not checked
	`wodt`	Instruction	Fixed	4	
	yyyy	On Delay Time (0.1 s units)	0000-0255	4	
Operation	Saves the On Delay Time of all circuits to EEPROM and RAM.				
Saved to EEPROM	Yes				
Reply	No reply				

9-8 x000oledyyyy OLED display ON/OFF for all

Function	OLED display ON/OFF for all				
Send format	**`x000oledyyyy (12 chars)`**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	x	Mode character (all modules)	Fixed	1	
	`000`	All modules	000	3	Content is not checked
	`oled`	Instruction	Fixed	4	
	yyyy	OLED power	0000=OFF / other=ON	4	
Operation	Switches the OLED of all modules and saves the state to EEPROM.				
Saved to EEPROM	Yes				
Reply	No reply				

9-9 x000respyyyy Set the response mode (response_mode)

Function	Set the response mode (response_mode)				
Send format	**`x000respyyyy (12 chars)`**				
	Field	**Description**	**Range**	**Chars**	**Remarks**
	x	Mode character (all modules)	Fixed	1	
	`000`	All modules	000	3	Content is not checked
	`resp`	Instruction	Fixed	4	
	yyyy	Response mode	0000-0004	4	
Operation	Sets response_mode of all modules in EEPROM and RAM. See the response mode table in General information for the values.				
Saved to EEPROM	Yes				
Reply	No reply				