

CONVERTER STATUS	3x05051 4x05051 I:5050	0,0x0000 B:00 00			UINT16 R/O	
DIP SWITCH	3x10010 4x10010 I:10009	15,0x000F B:00 0F			UINT16 R/O	
Returns the current setting of the Dip switches. For ULTRA SLIM IOs The current value of the DIP switches: Bit 0: DIP Switch 1 (=0:OFF, =1:ON) Bit 1: DIP Switch 2 (=0:OFF, =1:ON) Bit 2: DIP Switch 3 (=0:OFF, =1:ON) Bit 3: DIP Switch 4 (=0:OFF, =1:ON)						
SOFTWARE RESET						
RESET	1x06001 2x06001 I:6000	0,0x00 B:00		N/A:NO CHANGE	BIT R/W	YES
Performs a software reset, whenever 1 is written to this register. If the host writes to this register 1, the module executes a soft reset (reboot).						
RESET	3x06001 4x06001 I:6000	0,0x0000 B:00 00		N/A:NO CHANGE	UINT16 R/W	YES
Performs a software reset, whenever 1 is written to this register. If the host writes to this register 1, the module executes a soft reset (reboot).						
PRODUCT DATA						
HW_GROUP	3x65201 4x65201 I:65200	8195,0x2003 B:20 03			UINT16 R/O	
This is the group of hardware of the current product						
SW_GROUP	3x65202 4x65202 I:65201	4096,0x1000 B:10 00			UINT16 R/O	
This is the group of software of the current product						
SW_VERSION	3x65203 4x65203 I:65202	4352,0x1100 B:11 00			UINT16 R/O	
SW VERSION:1.1.0						
This is the current software version of the firmware						
SW_AUTHOR	3x65204 4x65204 I:65203	18771,0x4953 B:49 53			UINT16 R/O	
This is the current software author of the firmware						
MODBUS SETTINGS						
UNIT_ID	3x65222 4x65222 I:65221	65535,0xFFFF B:FF FF		N/A:NO CHANGE	UINT16 R/W	NO
UNIT ID:255						

If the host reads this register, the current programmed unit ID is returned. All values above unit ID 255 define also the unit ID 255.
 If the host writes a new value into this register, the new value will be stored in the FLASH as the new unit ID. The new unit ID is activated after a power off/power on cycle or a software reboot of the module.
 The host can execute a reboot in writing to the register RESET SYSTEM.

NOTE:DIP switch 4 must be set to OFF to activate this unit ID, otherwise the unit ID is 255.

HINT:This settings will be active after you repower or reset your device !!

BAUD_RATE	3x65223 4x65223 I:65222	4294967295,0xFFFFFFFF B:FF FF FF FF	38400	38400	UINT32 R/W	NO
		57600Bd		ENTER BAUD RATE		

This is the current configured baud rate for DIP switch mode DIP1=ON, DIP2=ON (default is 57600bd)

DIP switch settings:
 DIP1-DIP2
 OFF-OFF:9600bd
 ON-OFF:19200bd
 OFF-ON:38400bd
 ON-ON:default 57600bd or the defined baud rate

Valid baud rates are:

300bd
 600bd
 1200bd
 2400bd
 4800bd
 9600bd
 19200bd
 38400bd
 all other:57600bd

HINT:This settings will be active after you repower or reset your device !!

PARITY	3x65225 4x65225 I:65224	65535,0xFFFF B:FF FF		N/A:NO CHANGE	UINT16 R/W	NO
		NO PARITY		SELECT PARITY		

If the register is read out, the currently set parity of the serial interface is returned.

Writing a value to this register will change the new parity in FLASH. This will only take effect after a restart of the module. This can be triggered by writing to the RESET SYSTEM register.

Parity values are

0: no parity
 1: even parity
 2: odd parity

STOP BITS	3x65226 4x65226 I:65225	65535,0xFFFF B:FF FF		N/A:NO CHANGE	UINT16 R/W	NO
		ONE STOPBIT		SELECT STOPBITS		

If the register is read out, the currently set number of stop bits of the serial interface is returned.

Writing a value to this register will change the new number of stop bits in the FLASH. This will only take effect after a restart of the module. This can be triggered by writing to the RESET SYSTEM register.

Values for stop bits are

1: one stop bit
 2: two stop bits

GET VERSION	ASCII READ COMMAND	#VERSION<CR> #VER<CR> Result: #VERSION:<VersionHi>,<VersionMed>,<VersionLo><CR>	ASCII	
	TX	#VERSION<CR>		
	RX	#255,VERSION:1.1.0<CR>		
		Current SW version:1.1.0		
Returns the version number of the module VersionHi: Version number high (1..255) VersionMed: Version number medium (1..255) VersionLo: Version number low (1..255)				
GET TYPE	ASCII READ COMMAND	#TYPE<CR> #TYP<CR> Result: #TYPE:<Type><CR>	ASCII	
	TX	#TYPE<CR>		
	RX	#255,TYPE:RESI-1RO-SIO<CR>		
		Current module type:RESI-1RO-SIO		
Returns the current module type				
GET OWNER	ASCII READ COMMAND	#OWNER<CR> #OWN<CR> Result: #OWNER:<Owner><CR>	ASCII	
	TX	#OWNER<CR>		
	RX	#255,OWNER:RESI<CR>		
		Current owner:RESI		
Returns the current owner of the module				
GET CREATOR	ASCII READ COMMAND	#CREATOR<CR> #CRE<CR> Result: #CREATOR:<Creator><CR>	ASCII	
	TX	#CREATOR<CR>		
	RX	#255,CREATOR:DI HC SIGL,MSC<CR>		
		Current creator:DI HC SIGL,MSC		
Returns the current creator of the module				
GET COPYRIGHT	ASCII READ COMMAND	#COPYRIGHT<CR> #COPY<CR> Result: #COPYRIGHT:<Copyright><CR>	ASCII	
	TX	#COPYRIGHT<CR>		
	RX	#255,COPYRIGHT:2016,2020 BY RESI AND DI HC SIGL,MSC WWW.RESI.CC<CR>		
		Current copyright:2016,2020 BY RESI AND DI HC SIGL,MSC WWW.RESI.CC		
Returns the current copyright of the module				

GET DIP SWITCH	ASCII READ COMMAND	#GET DIP<CR> #GDIP<CR> Result: #GDIP:<DIPSwitchDec>,<DIPSwitchHex><CR>	ASCII	
	TX	#GET DIP<CR>		
	RX	#255,GDIP:15,0xF<CR>		
		Current DIP SWITCH settings:1111		

Returns the current setting of the Dip switches as decimal number and as hexadecimal number.

DIPSwitchDec

DIPSwitchHex

The current value of the DIP switches:

Bit 0: DIP Switch 1 (=0:OFF, =1:ON)

Bit 1: DIP Switch 2 (=0:OFF, =1:ON)

Bit 2: DIP Switch 3 (=0:OFF, =1:ON)

Bit 3: DIP Switch 4 (=0:OFF, =1:ON)

ASCII COMMANDS

SET MODBUS ADDRESS	ASCII WRITE COMMAND	#SET MODBUS ADDRESS:<UNITID><CR> #SETMBADR:<UNITID><CR> Result: #OK<CR>	ASCII	NO
	UNITID	1		
	TX	#SET MODBUS ADDRESS:1<CR>		
	RX	N/A		

Redefines the unit ID of the module. This change will affect the MODBUS/RTU communication immediately. As a Unit IO you can use the values 0dec to 255dec.

HINT: The new settings are activated after a system reboot or power off on cycle!

SET MODBUS BAUDRATE	ASCII WRITE COMMAND	#SET MODBUS BAUDRATE:<BAUD><CR> #SETMBBAUD:<BAUD><CR> Result: #OK<CR>	ASCII	NO
	BAUD	57600:57600BD		
	TX	#SET MODBUS BAUDRATE:57600<CR>		
	RX	N/A		

Sets a new baudrate for the serial interface, if DIP Switches DIP1=ON and DIP2=ON.

The following baudrates are allowed:

300bd

600bd

1200bd

2400bd

4800bd

9600bd

19200bd

38400bd

all others are interpreted as 57600bd

HINT: The new setup parameters will be active after a restart of the module.

SET MODBUS PARITY	ASCII WRITE COMMAND	#SET MODBUS PARITY:<PARITY><CR> #SETMBPAR:<PARITY><CR> Result: #OK<CR>	ASCII	NO
	PARITY	NONE:NO PARITY		
	TX	#SET MODBUS PARITY:NONE<CR>		
	RX	N/A		
Sets a new parity for the serial interface. MBParity: NONE: no parity EVEN: even parity ODD: odd parity HINT: The new setup parameters will be active after a restart of the module.				
SET MODBUS STOPS	ASCII WRITE COMMAND	#SET MODBUS STOP:<STOPBIT><CR> #SETMBSTOP:<STOPBIT><CR> Result: #OK<CR>	ASCII	NO
	STOPBIT	ONE:ONE STOPBIT		
	TX	#SET MODBUS STOP:ONE<CR>		
	RX	N/A		
Sets a new amount of stop bits for the serial interface. MBStops ONE: one stop bit TWO: two stop bits HINT: The new setup parameters will be active after a restart of the module.				
SET MODBUS PARAMS	ASCII WRITE COMMAND	#SET MODBUS PARAMS:<UNITID>,<BAUD>,<PARITY>,<STOPBIT><CR> #SETMBPARAMS:<UNITID>,<BAUD>,<PARITY>,<STOPBIT><CR> Result: #OK<CR>	ASCII	NO
	UNITID	1		
	BAUD	57600:57600BD		
	PARITY	NONE:NO PARITY		
	STOPBIT	ONE:ONE STOPBIT		
	TX	#SET MODBUS PARAMS:1,57600,NONE,ONE<CR>		
	RX	N/A		
Sets all parameters for serial interface				
GET MODBUS ADDRESS	ASCII READ COMMAND	#GET MODBUS ADDRESS<CR> #GMBADR<CR> Result: #GMBADR:<MBUnitDec>,<MBFLASHDec>,<MBUnitHex>,<MBFLASHHex><CR>	ASCII	
	TX	#GET MODBUS ADDRESS<CR>		
	RX	#255,GMBADR:255,0xFF,65535,0xFFFF<CR>		
		Current MODBUS unit ID for DIP4=OFF:255,0xFF,65535,0xFFFF		

Shows the current used MODBUS/RTU or ASCII unit address and shows also the stored unit address in the FLASH memory, which is only used if the DIP switch for the bus address is set to 0.

MBUnitDec,MBUnitHex

The current used MODBUS/RTU unit or ASCII address for communication

MBFLASHDec,MBFLASHHex

The internal stored MODBUS/RTU unit address or ASCII address from the FLASH memory, if the DIP switch DIP3 is OFF.

GET MODBUS BAUDRATE	ASCII READ COMMAND	#GET MODBUS BAUDRATE<CR> #GMBBAUD<CR> Result: #GMBBAUD:<BaudRate><CR>	ASCII	
	TX	#GET MODBUS BAUDRATE<CR>		
	RX	#255,GMBBAUD:57600<CR>		
		Current baudrate for DIP1+2=ON:57600		

Returns the current defined baud rate for the serial interface, if DIP switches DIP1=ON and DIP2=ON.

The following baudrates are allowed:

300bd
600bd
1200bd
2400bd
4800bd
9600bd
19200bd
38400bd

all others are interpreted as 57600bd

GET MODBUS PARITY	ASCII READ COMMAND	#GET MODBUS PARITY<CR> #GMBPAR<CR> Result: #GMBPAR:<MBParity><CR>	ASCII	
	TX	#GET MODBUS PARITY<CR>		
	RX	#255,GMBPAR:NONE<CR>		
		Current parity:NONE		

Shows the current configured parity of the serial interface.

MBParity

NONE: no parity

EVEN: even parity

ODD: odd parity

GET MODBUS STOP	ASCII READ COMMAND	#GET MODBUS STOP<CR> #GMBSTOP<CR> Result: #GMBSTOP:<MBStop><CR>	ASCII	
	TX	#GET MODBUS STOP<CR>		
	RX	#255,GMBSTOP:ONE<CR>		
		Current stopbit(s):ONE		

Returns the current configured amount of stop bits for the serial interface.

MBStops

ONE: one stop bit

TWO: two stop bits

GET MODBUS PARAMS	ASCII READ COMMAND	#GET MODBUS PARAMS<CR> #GMBPARAMS<CR> Result: #GMBPARAMS:<MBUnitDec>,<MBFLASHDec>,<MBUnitHex>,<MBFLASHHex>, <MBBaudrateDec>,<MBBaudrateHex>,<MBParity>,<MBStops><CR>	ASCII	
	TX	#GET MODBUS PARAMS<CR>		
	RX	#255,GMBPARAMS:255,0xFF,65535,0xFFFF,57600,0xE100,NONE,ONE<CR>		
		Current MODBUS unit ID used:255		
		Current MODBUS unit ID in FLASH:65535		
		Current baudrate in FLASH:57600		
		Current parity in FLASH:NONE		
		Current stopbit(s) in FLASH:ONE		
Returns the complete settings for serial interface				
ASCII COMMANDS				
RESET	ASCII WRITE COMMAND	#RESET<CR> #RST<CR> Result: #OK<CR>	ASCII	NO
	TX	#RESET<CR>		
	RX	N/A		
Executes a software reset (Reboot) of the module.				
FACTORY RESET	ASCII WRITE COMMAND	#FACTORY RESET<CR> #FRST<CR> Result: #OK<CR>	ASCII	NO
	TX	#FACTORY RESET<CR>		
	RX	N/A		
Executes a factory reset of all parameters to default values within the module and reboots the module				

IS FADING	1x00001 2x00001 I:0	0,0x01 B:00			BIT R/O	
Current fading state:1=FADING IS ACTIVE						
Is the module currently fading from one value to another value =0:no fading is active =1:Fading is running						
LED PWM OUTPUTS						
LO1	3x00001 4x00001 I:0	41,0x0029 B:00 29	41	1,0	UINT16 R/W	YES
Current brightness setpoint for PWM output O1: 41->1,00%						
Dimming value for the LED PWM output O1. ..4095 or 0x000...0xFFFF for 0% to 100% brightness If you write to this register, you define a new value for the output O1						
LO2	3x00002 4x00002 I:1	0,0x0000 B:00 00	0	0,0	UINT16 R/W	YES
Current brightness setpoint for PWM output O2: 0->0,00%						
Dimming value for the LED PWM output O2. ..4095 or 0x000...0xFFFF for 0% to 100% brightness If you write to this register, you define a new value for the output O2						
LO3	3x00003 4x00003 I:2	0,0x0000 B:00 00	0	0,0	UINT16 R/W	YES
Current brightness setpoint for PWM output O3: 0->0,00%						
Dimming value for the LED PWM output O3. ..4095 or 0x000...0xFFFF for 0% to 100% brightness If you write to this register, you define a new value for the output O3						
MODE	3x00004 4x00004 I:3	2,0x0002 B:00 02		2:FLASH	UINT16 R/W	YES

Current mode for the LED module

=0:OFF: The three output values LO1, LO2, LO3 are ignored and all three outputs O1, O2, O3 are set to 0.

=1:ON: The three outputs O1, O2 and O3 are set immediately to the three output values LO1, LO2 and LO3.

=2:FLASH: The three outputs O1, O2, O3 are set to the output values LO1, LO2 and LO3 for the configured time span MINTIME in 1/10s.

Afterwards all three outputs are set to 0 for the configured time span MAXTIME in 1/10s. This cycle will be repeated as long as this mode is active.

=3: FADE: Whenever you write a new value into one of the three output registers LO1, LO2 or LO3, the module fades the current output registers CLO1, CLO2 and CLO3 to the new values.

The fade speed is defined in steps per 17100s in the register FADE SPEED.

=4:RANDOM: After a random time span between MINTIME and MAXTIME in seconds, the system dices three new output values for the registers RLO1, RLO2 and RLO3. For the diced values those rules are applied:

New diced value for RLOx is between 0 and Lox

Then the system fades with the configuredFADESPEED to the new values RLO1, RLO2 und RLO3. This procedure will be repeated.

=5: SEQUENCE: All three outputs flashes successively with the set points LO1, LO2, LO3. The three outputs are on for the time period

MIN TIME in 1/10s. In between the three outputs are 0 for a time period MAXTIME in 1/10s.

If you write to this register, you set up a new mode for the module.

FADESPEED	3x00005 4x00005 I:4	10,0x000A B:00 0A		3	UINT16 R/W	YES
Current fading speed: 1,00s						

Current dimming or fading speed for the outputs in mode FADE and RANDOM in steps per 1/100s. The smallest value is 1.

Every 1/100s the system add/subtracts this FADESPEED value from the three outputs CLO1, CLO2 and CLO3.

So the value 1 in FADESPEED means, that if CLO1 has the start value 0 and the new value LO1 is 4095, the fade up process will last for 40.95 seconds.

This is the slowest fading speed of the module. A value of 4095 or more defines the fastest fade speed. After 1/100s the new value will be valid.

If you write on this register, you will redefine the FADESPEED

MINTIME	3x00006 4x00006 I:5	10,0x000A B:00 0A		10	UINT16 R/W	YES
Current minimum time: 1,00s						

For the mode FLASH and SEQUENCE this value means the ON time of the flashing or sequence cycle in 1/10s.

For the mode RANDOM this value defines the minimum time span for a new dicing cycle. The dicing cycle dices new random values for the registers RLO1, RLO2 and RLO3

and fades to this new brightness values. The time span is defined in seconds.

If you write to this register, you will redefine this value.

MAXTIME	3x00007 4x00007 I:6	30,0x001E B:00 1E		10	UINT16 R/W	YES
Current maximum time: 3,00s						

For the mode FLASH and SEQUENCE this value means the OFF time of the flashing or sequence cycle in 1/10s.

For the mode RANDOM this value defines the maximum time span for a new dicing cycle. The dicing cycle dices new random values for the registers RLO1, RLO2 and RLO3

and fades to this new brightness values. The time span is defined in seconds.

If you write to this register, you will redefine this value.

CLO1	3x00008 4x00008 I:7	41,0x0029 B:00 29			SINT16 R/O	
Current brightness for PWM output O1: 41->1,00%						

The real value on the LED PWM output O1 including diming and the current mode.

0..4095 or 0x000...0xFFFF for 0% to 100% brightness

CLO2	3x00009 4x00009 I:8	0,0x0000 B:00 00			SINT16 R/O	
Current brightness for PWM output O2: 0->0,00%						
The real value on the LED PWM output O2 including diming and the current mode. 0..4095 or 0x000...0xFFFF for 0% to 100% brightness						
CLO3	3x00010 4x00010 I:9	0,0x0000 B:00 00			SINT16 R/O	
Current brightness for PWM output O3: 0->0,00%						
The real value on the LED PWM output O3 including diming and the current mode. 0..4095 or 0x000...0xFFFF for 0% to 100% brightness						
RLO1	3x00011 4x00011 I:10	0,0x0000 B:00 00			SINT16 R/O	
Last diced random value for output O1: 0->0,00%						
The last diced random number for the LED PWM output O1 in mode RANDOM. 0..4095 or 0x000...0xFFFF for 0% to 100% brightness						
RLO2	3x00012 4x00012 I:11	0,0x0000 B:00 00			SINT16 R/O	
Last diced random value for output O2: 0->0,00%						
The last diced random number for the LED PWM output O2 in mode RANDOM. 0..4095 or 0x000...0xFFFF for 0% to 100% brightness						
RLO3	3x00013 4x00013 I:12	0,0x0000 B:00 00			SINT16 R/O	
Last diced random value for output O3: 0->0,00%						
The last diced random number for the LED PWM output O3 in mode RANDOM. 0..4095 or 0x000...0xFFFF for 0% to 100% brightness						
ISFADING	3x00014 4x00014 I:13	0,0x0000 B:00 00			SINT16 R/O	
Current fading state:0=NO FADING						
Is the module currently fading from one value to another value =0:no fading is active =1:fading is running						

SET OUTPUT LOx	ASCII WRITE COMMAND	#SET LO<LONR>:<PWMVALUE><CR> #SLO<LONR>:<PWMVALUE><CR> Result: #OK<CR>	ASCII	NO
	LONR	1		
	PWMVALUE	100		
	TX	#SET LO1:100<CR>		
	RX	N/A		
Stores the new value LOxValue into the set point register LOx.LOxValue: the new set point value for the register LOx in the range of 0..4095 or 0x000 to 0xFFFF				
GET OUTPUTS	ASCII READ COMMAND	#GET LOS<CR> #GLOS<CR> Result: #GLOS:<LO1Dec>,<LO2Dec>,<LO3Dec>,<LO1Hex>,<LO2Hex>,<LO3Hex><CR>	ASCII	
	TX	#GET LOS<CR>		
	RX	#255,GLOS:41,0,0,0x29,0x0,0x0<CR>		
		Current value of PWM output O1:41->1,00%		
		Current value of PWM output O2:0->0,00%		
		Current value of PWM output O3:0->0,00%		
Returns the current value of all three set point values of the PWM outputs LO1, LO2, LO3 as decimal and hexadecimal number LO1Dec,LO1Hex: The current set point of the dimmable output 1 in the range of 0 to 4095 or 0x000 to 0xFFFF LO2Dec,LO2Hex: The current set point of the dimmable output 2 in the range of 0 to 4095 or 0x000 to 0xFFFF LO3Dec,LO3Hex: The current set point of the dimmable output 12 in the range of 0 to 4095 or 0x000 to 0xFFFF				
GET OUTPUT LOx	ASCII READ COMMAND	#GET LO<LONR><CR> #GLO<LONR><CR> Result: #GLO<LONR>:<LOxDec>,<LOxHex><CR>	ASCII	
	LONR	1		
	TX	#GET LO1<CR>		
	RX	#255,GLO1:41,0x29<CR>		
		Current value of PWM output O1:41->1,00%		
Returns the current set point value of the PWM output LOx as decimal and hexadecimal number LOxDec,LOxHex: The current set point of the dimmable output LOx in the range of 0 to 4095 or 0x000 to 0xFFFF				
SET MODE	ASCII WRITE COMMAND	#SET MODE:<MODE><CR> #SMODE:<MODE><CR> Result: #OK<CR>	ASCII	NO
	MODE	1:ON		
	TX	#SET MODE:1<CR>		
	RX	N/A		

Sets the mode for the three LED outputs to the new mode MODEx.

MODE: The new mode for the LED module

=0: OFF: All three outputs of the affected LED group are immediately switched to 0

=1: ON: All three outputs of the affected LED group are dimmed to the values LOx immediately

=2: FLASH: All three outputs of the affected LED group flashes in the rhythm of the parameterized minimum and maximum times with the three set point values LOx.

=3: FADE: All three outputs of the affected LED group fade with the current speed FADE SPEEDx to the new values LOx.

=4: RANDOM: All three outputs of the affected LED group dices a random number for each channel in the range of 0 to LOx. Then the three outputs fade to the new values with the current FADE SPEEDx.

After a random pause between the configured minimum and maximum time in seconds, this procedure will be repeated.

=5: SEQUENCE: All three outputs of the affected LED group flashes successively with the three set points LOx. The three outputs are on for the time period MIN TIMEx in 1/10s.

In between the three outputs are 0 for a time period MAXTIMEx in 1/10s.

GET MODE	ASCII READ COMMAND	#GET MODE<CR> #GMODE<CR> Result: #GMODE:<MODEDec>,<MODEHex><CR>	ASCII	
	TX	#GET MODE<CR>		
	RX	#255,GMODE:2,0x2<CR>		
		Current mode: 2:FLASH		

Returns the current mode.

MODEDec,MODEHex: The current mode of the module.

=0: OFF: All three outputs of the affected LED group are immediately switched to 0

=1: ON: All three outputs of the affected LED group are dimmed to the values LOx immediately

=2: FLASH: All three outputs of the affected LED group flashes in the rhythm of the parameterized minimum and maximum times with the three set point values LOx.

=3: FADE: All three outputs of the affected LED group fade with the current speed FADE SPEEDx to the new values LOx.

=4: RANDOM: All three outputs of the affected LED group dices a random number for each channel in the range of 0 to LOx. Then the three outputs fade to the new values with the current FADE SPEEDx.

After a random pause between the configured minimum and maximum time in seconds, this procedure will be repeated.

=5: SEQUENCE: All three outputs of the affected LED group flashes successively with the three set points LOx. The three outputs are on for the time period MIN TIMEx in 1/10s.

In between the three outputs are 0 for a time period MAXTIMEx in 1/10s.

SET FADE	ASCII WRITE COMMAND	#SET FADE:<FADE><CR> #SFADE:<FADE><CR> Result: #OK<CR>	ASCII	NO
	FADE	3		
	TX	#SET FADE:3<CR>		
	RX	N/A		

Sets the new fading speed for the fading in the two modes FADE and RANDOM

FADE: The new speed for fading in steps per 1/100s.

GET FADE	ASCII READ COMMAND	#GET FADE<CR> #GFADE<CR> Result: #GFADE:<FADEDec>,<FADEHex><CR>	ASCII	
	TX	#GET FADE<CR>		
	RX	#255,GFADE:10,0xA<CR>		
		Current fade: :10		

Returns the current fade speed of the LED module in steps per 1/100s.
FADEDec, FADEHex: The current fade speed in steps per 1/100s.

SET MIN TIME	ASCII WRITE COMMAND	#SET MIN TIME:<MINTIME><CR> #SMINT:<MINTIME><CR> Result: #OK<CR>	ASCII	NO
	MINTIME	10		
	TX	#SET MIN TIME:10<CR>		
	RX	N/A		

Sets the new minimum time. This time is used in the three modes FLASH, RANDOM and SEQUENCE.

MINTIME: The new value for the minimum time.

In the modes FLASH and SEQUENCE, this time defines the ON time span of the three outputs with the three values LOx. The OFF time span with the three values 0 is defined with the MAXTIMEx parameter. The parameter specifies a time in 1/10s.

In the mode RANDOM this time defines the minimum time span between two random value changes. The parameter specifies a time span in seconds.

GET MIN TIME	ASCII READ COMMAND	#GET MIN TIME<CR> #GMINT<CR> Result: #GMINT:<MINTIMEDec>,<MINTIMEHex><CR>	ASCII	
	TX	#GET MIN TIME<CR>		
	RX	#255,GMINT:10,0xA<CR>		
		Current minimum time: 1,00s		

Returns the current defined minimum time.

MINTIMEDec,MINTIMEHex: The current value for the minimum time.

In the modes FLASH and SEQUENCE in 1/10s

In the mode RANDOM in seconds.

SET MAX TIME	ASCII WRITE COMMAND	#SET MAX TIME:<MAXTIME><CR> #SMAXT:<MAXTIME><CR> Result: #OK<CR>	ASCII	NO
	MAXTIME	10		
	TX	#SET MAX TIME:10<CR>		
	RX	N/A		

Sets the new maximum time. This time is used in the three modes FLASH, RANDOM and SEQUENCE.

MAXTIME: The new value for the maximum time.

In the modes FLASH and SEQUENCE, this time defines the OFF time span of the three outputs with the three values LOx. The ON time span with the three values LOx is defined with the MAXTIMEx parameter.

The parameter specifies a time in 1/10s.

In the mode RANDOM this time defines the minimum time span between two random value changes.

The parameter specifies a time span in seconds.

GET MAX TIME	ASCII READ COMMAND	#GET MAX TIME<CR> #GMAXT<CR> Result: #GMAXT:<MAXTIMEDec>,<MAXTIMEHex><CR>	ASCII	
	TX	#GET MAX TIME<CR>		
	RX	#255,GMAXT:30,0x1E<CR>		
		Current maximum time:3,00s		

Returns the current defined maximum time.

MAXTIMEDec,MAXTIMEHex: The current value for the minimum time.

In the modes FLASH and SEQUENCE in 1/10s

In the mode RANDOM in seconds.

SET TIMES	ASCII WRITE COMMAND	#SET TIMES:<MINTIME>,<MAXTIME><CR> #STIMES:<MINTIME>,<MAXTIME><CR> Result: #OK<CR>	ASCII	NO
	MINTIME	10		
	MAXTIME	11		
	TX	#SET TIMES:10,11<CR>		
	RX	N/A		

Sets the new minimum and maximum times for the three modes FLASH, RANDOM and SEQUENCE.

MINTIME: The new value for the minimum time.

In the modes FLASH and SEQUENCE, this time defines the ON time span of the three outputs with the three values LOx.

The OFF time span with the three values 0 is defined with the MAXTIME parameter.

The parameter specifies a time in 1/10s.

In the mode RANDOM this time defines the minimum time span between two random value changes.

The parameter specifies a time span in seconds.

MAXTIME: The new value for the maximum time.

In the modes FLASH and SEQUENCE, this time defines the OFF time span of the three outputs with the three values LOx.

The ON time span with the three values LOx is defined with the MAXTIME parameter.

The parameter specifies a time in 1/10s.

In the mode RANDOM this time defines the minimum time span between two random value changes.

The parameter specifies a time span in seconds.

GET TIMES	ASCII READ COMMAND	#GET TIMES<CR> #GTIMES<CR> Result: #GTIMES:<MINTIMEDec>,<MAXTIMEDec>,<MINTIMEHex>,<MAXTIMEHex><CR>	ASCII	
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	TX	#GET TIMES<CR>		
	RX	#255,GTIMES:10,30,0xA,0x1E<CR>		
		Current minimum time:1,00s		
		Current maximum time:3,00s		
<p>Returns the current minimum and maximum times. MINTIMEDec,MINTIMEHex: The current value for the minimum time. In the modes FLASH and SEQUENCE in 1/10s. In the mode RANDOM in seconds. MAXTIMEDec,MAXTIMEHex: The current value for the maximum time. In the modes FLASH and SEQUENCE in 1/10s. In the mode RANDOM in seconds.</p>				
SET ALL	ASCII WRITE COMMAND	#SET ALL:<MODE>,<LO1>,<LO2>,<LO3>,<MINTIME>,<MAXTIME>,<FADE><CR> #SALL:<MODE>,<LO1>,<LO2>,<LO3>,<MINTIME>,<MAXTIME>,<FADE><CR> Result: #OK<CR>	ASCII	YES
	MODE	4:RANDOM		
	LO1	500		
	LO2	300		
	LO3	200		
	MINTIME	10		
	MAXTIME	11		
	FADE	3		
	TX	#SET ALL:4,500,300,200,10,11,3<CR>		
	RX	N/A		

Sets all values with one command.

MODE: The new mode for the affected LED group

=0: OFF: All three outputs of the affected LED group are immediately switched to 0

=1: ON: All three outputs of the affected LED group are dimmed to the values LOx immediately

=2: FLASH: All three outputs of the affected LED group flashes in the rhythm of the parameterized minimum and maximum times with the three set point values LOx.

=3: FADE: All three outputs of the affected LED group fade with the current speed FADE SPEED to the new values LOx.

=4: RANDOM: All three outputs of the affected LED group dices a random number for each channel in the range of 0 to LOx.

Then the three outputs fade to the new values with the current FADE SPEED.

After a random pause between the configured minimum and maximum time in seconds, this procedure will be repeated.

=5: SEQUENCE: All three outputs of the affected LED group flashes successively with the three set points LOx.

The three outputs are on for the time period MIN TIME in 1/10s.

In between the three outputs are 0 for a time period MAXTIME in 1/10s.

LO1: The new value of the PWM output LOx A in the range of 0..4095 or 0x000 to 0xFFFF

LO2: The new value of the PWM output LOx B in the range of 0..4095 or 0x000 to 0xFFFF

LO3: The new value of the PWM output LOx C in the range of 0..4095 or 0x000 to 0xFFFF

MINTIME: The new value for the minimum time.

In the modes FLASH and SEQUENCE, this time defines the ON time span of the three outputs with the three values LOx.

The OFF time span with the three values 0 is defined with the MAXTIME parameter. The parameter specifies a time in 1/10s.

In the mode RANDOM this time defines the minimum time span between two random value changes.

The parameter specifies a time span in seconds.

MAXTIME: The new value for the maximum time.

In the modes FLASH and SEQUENCE, this time defines the OFF time span of the three outputs with the three values LOx.

The ON time span with the three values LOx is defined with the MAXTIME parameter. The parameter specifies a time in 1/10s.

In the mode RANDOM this time defines the minimum time span between two random value changes. The parameter specifies a time span in seconds.

FADE: The new speed for fading in steps per 1/100s.

GET ALL	ASCII READ COMMAND	#GET ALL<CR> #GALL<CR> Result: #GALL:<MODEDec>,<LO1Dec>,<LO2Dec>,<LO3Dec>, <MINTIMEDec>,<MAXTIMEDec>,<FADEDec>, <CLO1Dec>,<CLO2Dec>,<CLO3Dec>,<RLO1Dec>,<RLO2Dec>,<RLO3Dec>, <MODEHex>,<LO1Hex>,<LO2Hex>,<LO3Hex>, <MINTIMEHex>,<MAXTIMEHex>,<FADEHex>, <CLO1Hex>,<CLO2Hex>,<CLO3Hex>,<RLO1Hex>,<RLO2Hex>,<RLO3Hex>,<CR>	ASCII	
	LEDNR	1		
	TX	#GET ALL<CR>		
	RX	#255,GALL:2,41,0,0,10,30,10,0,0,0,0,0,0,0,0x2,0x29,0x0,0x0,0xA,0x1E,0xA,0x0,0x0,0x0,0x0,0x0,0x0<CR>		
		Current mode: 2:FLASH		
		Current value of PWM output O1:41->1,00%		
		Current value of PWM output O2:0->0,00%		
		Current value of PWM output O3:0->0,00%		
		Current minimum time:1,00s		
		Current maximum time:3,00s		
		Current fade:10		

		Current real output value of PWM output O1:0->0,00%		
		Current real output value of PWM output O2:0->0,00%		
		Current real output value of PWM output O3:0->0,00%		
		Current random output value of PWM output O1:0->0,00%		
		Current random output value of PWM output O2:0->0,00%		
		Current random output value of PWM output O3:0->0,00%		

Returns the current values in one answer.

MODEDec,MODEHex: The new mode for the affected LED group. See MODE description ion command GALL

LO1Dec,LO1Hex: The new value of the PWM output LOx A in the range of 0..4095 or 0x000 to 0xFFF

LO2Dec,LO2Hex: The new value of the PWM output LOx B in the range of 0..4095 or 0x000 to 0xFFF

LO3Dec,LO3Hex: The new value of the PWM output LOx C in the range of 0..4095 or 0x000 to 0xFFF

MINTIMEDec,MINTIMEHex: The new value for the minimum time.

In the modes FLASH and SEQUENCE, this time defines the ON time span of the three outputs with the three values LOx. The OFF time span with the three values 0 is defined with the MAXTIME parameter.

The parameter specifies a time in 1/10s.

In the mode RANDOM this time defines the minimum time span between two random value changes. The parameter specifies a time span in seconds.

MAXTIMEDec,MAXTIMEHex: The new value for the maximum time.

In the modes FLASH and SEQUENCE, this time defines the OFF time span of the three outputs with the three values LOx. The ON time span with the three values LOx is defined with the MAXTIME parameter.

The parameter specifies a time in 1/10s.

In the mode RANDOM this time defines the minimum time span between two random value changes. The parameter specifies a time span in seconds.

FADEDec,FADEHex: The new speed for fading in steps per 1/100s.

CLO1Dec,CLO1Hex: The current output value of the output O1 in the range of 0 to 4095 or 0x000 to 0xFFF including dimming and mode information.

CLO2Dec,CLO2Hex: The current output value of the output O2 in the range of 0 to 4095 or 0x000 to 0xFFF including dimming and mode information.

CLO3Dec,CLO3Hex: The current output value of the output O3 in the range of 0 to 4095 or 0x000 to 0xFFF including dimming and mode information.

RLO1Dec,RLO1Hex: The last diced value in mode RANDOM for output O1 in the range of 0 to 4095 or 0x000 to 0xFFF.

RLO2Dec,RLO2Hex: The last diced value in mode RANDOM for output O2 in the range of 0 to 4095 or 0x000 to 0xFFF.

RLO3Dec,RLO3Hex: The last diced value in mode RANDOM for output CO3in the range of 0 to 4095 or 0x000 to 0xFFF.

GET CURRENT LOS	ASCII READ COMMAND	#GET CURRENT LOS<CR> #GCLOS<CR> Result: #GCLOS:<CLO1Dec>,<CLO2Dec>,<CLO3Dec>,<CLO1Hex>,<CLO2Hex>,<CLO3Hex><CR>	ASCII	
	TX	#GET CURRENT LOS<CR>		
	RX	#255,GCLOS:0,0,0,0x0,0x0,0x0<CR>		
		Current real output of PWM output 1:0->0,00%		
		Current real output of PWM output 2:0->0,00%		
		Current real output of PWM output 3:0->0,00%		

Returns all current values of all three outputs O1, O2, O3.

CLO1Dec,CLO1Hex: The real value of the output O1 in the range of 0 to 4095 or 0x000 to 0xFFF, including all fading and all modes.

CLO2Dec,CLO2Hex: The real value of the output O2 in the range of 0 to 4095 or 0x000 to 0xFFF, including all fading and all modes.

CLO3Dec,CLO3Hex: The real value of the output O3 in the range of 0 to 4095 or 0x000 to 0xFFF, including all fading and all modes.

GET CURRENT LOx	ASCII READ COMMAND	#GET CURRENT LO<LONR><CR> #GCLO<LONR><CR> Result: #GCLO<LONR>:<CLOxDec>,<CLOxHex><CR>	ASCII	
	LONR	1		
	TX	#GET CURRENT LO1<CR>		
	RX	#255,GCLO1:0,0x0<CR>		
		Current real output of PWM output 1:0->0,00%		
Returns the current value of the channel Ox. CLOxDec,CLOxHex: The real value of the output Ox in the range of 0 to 4095 or 0x000 to 0xFFFF, including all fading and all modes.				
GET RANDOM LOS	ASCII READ COMMAND	#GET RANDOM LOS<CR> #GRLOS<CR> Result: #GRLOS:<RLO1Dec>,<RLO2Dec>,<RLO3Dec>,<RLO1Hex>,<RLO2Hex>,<RLO3Hex><CR>	ASCII	
	TX	#GET RANDOM LOS<CR>		
	RX	#255,GRLOS:0,0,0,0x0,0x0,0x0<CR>		
		Current random output of PWM output 1:0->0,00%		
		Current random output of PWM output 2:0->0,00%		
		Current random output of PWM output 3:0->0,00%		
Returns the last diced values for the three outputs O1, O2, O3 in mode RANDOM. RLO1Dec,RLO1Hex: The last diced number in mode RANDOM for output O1 in the range of 0 to 4095 or 0x000 to 0xFFFF. RLO2Dec,RLO2Hex: The last diced number in mode RANDOM for output O2 in the range of 0 to 4095 or 0x000 to 0xFFFF. RLO3Dec,RLO3Hex: The last diced number in mode RANDOM for output O3 in the range of 0 to 4095 or 0x000 to 0xFFFF.				
GET RANDOM LOx	ASCII READ COMMAND	#GET RANDOM LO<LONR><CR> #GRLO<LONR><CR> Result: #GRLO<LONR>:<RLOxDec>,<RLOxHex><CR>	ASCII	
	LONR	1		
	TX	#GET RANDOM LO1<CR>		
	RX	#255,GRLO1:0,0x0<CR>		
		Current random output of PWM output 1:0->0,00%		