Mode_Lighting_Control_small 50px

Title:

Version:

Author:

Date: 14 February 2018

**History**

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Ver | Initials | Changes |
| 7-May-14 | 0.1 | Jph | Initial attempt based on Technical Specification v0.6 |
| 9-Jun-14 | 0.2 | Jph | Modify ?AREANAMES and ?SCNNAMES to include area number  Add ?CHANNAMES query Rename ?SCN to ?SCNCHANS Add eDIN DMX state enumeration |
| 16-Apr-15 | 0.3 | Jph | Add HTTP connection info Add DBGECHO and DBGACK cmd & query  Add $BTNSTATE cmd  Add SCNOFF, SCNFAST, SCNRAMP, SCNTOOGLE, SCNONOFF cmd & event  Add ?SYSTEMID, ?BTNSTYLE  Remove INPSET and BTNSET cmd & query  Remove SCNBTNCOLR and SCNBTNTEXT events |
| 28-Sep-15 | 1.0.0 | Jph | Minor corrections to match GATEWAY ver 1.03  Add User login cmd & query |
| 26-Apr-16 | 1.1.0 | Jph | GATEWAY ver 1.04  Add DMXxxx cmds & queries  Add INPPIR cmds & queries |
| 9-May-16 | 1.1.1 | Jph | Add SCNBACKON cmd & event  Add missing xxxERR events  Add missing SCNDMXLEVEL cmd & response |
| 13-Sep-16 | 1.2.0 | Jph | GATEWAY ver 1.05 Add Status codes table  Add DALISCAN, DALIREPAIR, DALIACCEPT cmd & event  Add SHOWxxx cmds  Add EMxxx cmds & queries |
| 22-Sep-16 | 1.2.1 | Jph | Amend EMSHOW entry  Add EVTADV cmd & query  Amend DALISCAN cmd, events & queries |
| 12-Dec-16 | 1.3.0 | Jph | GATEWAY ver 1.06 Add CHANCOLR cmd & event Add CHANMODE cmd & event  Add MODUPALETTE cmd |
| 28-Mar-17 | 1.3.1 | Jph | GATEWAY ver 1.0.7  Add DALIERR query  Add ERRORS query  Add DALI fixture status codes table |
| 14-Feb-18 | 1.3.2 | Jph | GATEWAY ver 1.08  Remove unimplemented CHANCOLR, CHANMODE and MODUPALETTE cmds and events  Add $DALIDONE cmd  Revise ?DALIERR query  Documentation changes to DALI numbering for improved clarity |

# Quick Reference Guide

## Raw Ip Connection

* Raw TCP/IP via default port 26
* RS232 default settings 9600,8,1,none with no handshaking

*Reply to a new connection opening:*

!GATRDY;<CR><LF>  
!VERSION,<version>;<CR><LF>

## Http Connection

* http://<npu\_ip\_address>/gateway? via default web port 80
* ajax POST, Content-Type:text/plain, data is valid cmd/query text
* for users add to ajax headers encrypted Authorization:Basic <user\_authorisation\_string>

## General Syntax and Operation

$<msgId>[,<parameter>,<parameter>,…]; for commands

?<msgId>[,<parameter>,<parameter>,…]; for queries

!<msgId>[,<parameter>,<parameter>,…]; for replies and events

Commands and queries:

* are case insensitive,
* numeric parameters can be variable length with or without leading zeros,
* all extra characters between commands (such as <CR> and <LF>) are tolerated and ignored.

Replies and events sent:

* are in upper case,
* have fixed length numeric parameters having leading zeros as necessary,
* have variable length text parameters but always as the last parameter,
* have <CR> and <LF> appended after each message.

Message acknowledgement:

* Message not recognised – !BAD;<CR><LF>
* Message recognised but replies with an error – !OK;<CR><LF> but no further response
* Message recognised and correct – full reply message !OK;<CR><LF>!<response>;<CR><LF>

## Administration Level Messages

* Debugging commands/requests  
  $DBGECHO,<on-off>; $DBGACK,<on-off>;  
  ?DBGECHO; ?DBGACK;
* Commands  
  $OK;  
  $EVENTS,<on-off>; $EVTOUT,<on-off>;  
  $EVTERR,<on-off>; $EVTDIS,<on-off>;  
  $EVTCIN,<on-off>; $EVTAIN,<on-off>;  
  $EVTSCN,<on-off>; $EVTADV,<on-off>;
* User Log in & out  
  $USER,<user-name>,<encrypted-password>;  
  $USER;
* Requests  
  ?VERSION; ?USER;  
  ?EVENTS; ?EVTOUT;  
  ?EVTERR; ?EVTDIS;  
  ?EVTCIN; ?EVTAIN;  
  ?EVTSCN; ?EVTADV;
* Replies & Events  
  !GATRDY;  
  !VERSION,<version-text>; !USER,<user-name>;  
  !EVTOUT,<on-off>; !EVTDIS,<on-off>;  
  !EVTERR,<on-off>; !EVTSCN,<on-off>;  
  !EVTCIN,<on-off>; !EVTAIN,<on-off>;  
  !EVTADV,<on-off>;  
  !DBGACK,<on-off>; !DBGECHO,<on-off>;

## Channel Level Messages

* Commands  
  $CHANFADE,<addr>,<devcode>,<chan-num>,<level>,<fadetime(ms)>;  
  $CHANSTATE,<addr>,<devcode>,<chan-num>,<state>;  
  $CHANSTOP,<addr>,<devcode>,<chan-num>;  
    
  $DALIFADE,<addr>,<devcode>,<dali-id>,<level>,<fadetime(ms)>;  
  $DALISTOP,<addr>,<devcode>,<dali-id>;  
    
  $DMXLEVEL,<addr>,<devcode>,<zone-num>,<level>,<fadetime(ms)>;  
  $DMXLEVELSTOP,<addr>,<devcode>,<zone-num>;  
  $DMXMODE,<addr>,<devcode>,<zone-num>,<mode>,<crossfadetime(ms)>;  
  $DMXCOLR,<addr>,<devcode>,<zone-num>,<r>,<g>,<b>,<w>;  
    
  $BTNCOLR,<addr>,<devcode>,<btn-num>,<palette-colour>;  
  $BTNTEXT,<addr>,<devcode>,<btn-num>,<text>;  
  $BTNSTATE,<addr>,<devcode>,<btn-num>,<state>;  
    
  $INPPIR,<addr>,<devcode>,<chan-num>,<state>;  
    
  $SHOWCHAN,<addr>,<devcode>,<chan-num>;  
  $SHOWDALI,<addr>,<devcode>,<dali-num>;  
  $SHOWDALI,<addr>,<devcode>,<dali-fixture>;  
  $SHOWOFF,<addr>,<devcode>
* Queries  
  ?CHAN,<addr>,<devcode>,<chan-num>;  
  ?CHANACCESS,<addr>,<devcode>,<chan-num>;  
    
  ?DALI,<addr>,<devcode>,<dali-num>;  
  ?DALIACCESS,<addr>,<devcode>,<dali-num>;  
    
  ?DMX,<addr>,<devcode>,<zone-num>;  
  ?DMXACCESS,<addr>,<devcode>,<zone-num>;  
    
  ?BTN,<addr>,<devcode>,<btn-num>;  
  ?BTNCOLR,<addr>,<devcode>,<btn-num>;  
  ?BTNTEXT,<addr>,<devcode>,<btn-num>;  
  ?BTNACCESS,<addr>,<devcode>,<btn-num>;  
    
  ?INP,<addr>,<devcode>,<chan-num>;  
  ?INPACCESS,<addr>,<devcode>,<chan-num>;
* Replies & Events  
  !CHANFADE,<addr>,<devcode>,<chan-num>,<level>,<fadetime(ms)>;!CHANSTATE,<addr>,<devcode>,<chan-num>,<state>;  
  !CHANSTOP,<addr>,<devcode>,<chan-num>;  
    
  !CHAN,<addr>,<devcode>,<chan-num>,<status-code>,<level>,<power>,<wattage>;  
  !CHANACCESS,<addr>,<devcode>,<chan-num>,<access>;  
    
  !DALIFADE,<addr>,<devcode>,<dali-id>,<level>,<fadetime(ms)>;  
  !DALISTOP,<addr>,<devcode>,<dali-id>;  
    
  !DALI,<addr>,<devcode>,<dali-num>,<status-code>,<level>,<power>,<wattage>;  
  !DALIACCESS,<addr>,<devcode>,<dali-num>,<access>;

!DMXLEVEL,<addr>,<devcode>,<zone-num>,<level>,<fadetime(ms)>;  
!DMXLEVELSTOP,<addr>,<devcode>,<zone-num>;  
!DMXMODE,<addr>,<devcode>,<zone-num>,<mode>,<crossfadetime(ms)>;  
!DMXCOLR,<addr>,<devcode>,<zone-num>,<r>,<g>,<b>,<w>;

!DMX,<addr>,<devcode>,<zone-num>,<status-code>,<mode>,<level>,<power>,  
 <wattage>;  
!DMXACCESS,<addr>,<devcode>,<zone-num>,<access>;  
  
!BTNCOLR,<addr>,<devcode>,<btn-num>,<palette-colour>;!BTNTEXT,<addr>,<devcode>,<btn-num>,<text>;!BTNSTATE,<addr>,<devcode>,<btn-num>,<new-state>;

!BTN,<addr>,<devcode>,<btn-num>,<status-code>,<state>;  
!BTNACCESS,<addr>,<devcode>,<btn-num>,<access>;  
!INPLEVEL,<addr>,<devcode>,<chan-num>,<new-level>;  
!INPSTATE,<addr>,<devcode>,<chan-num>,<new-state>;  
!INPPIR,<addr>,<devcode>,<chan-num>,<new-state>;  
  
!INP,<addr>,<devcode>,<chan-num>,<status-code>,<level>  
!INPACCESS,<addr>,<devcode>,<chan-num>,<access>;

!MODUERR,<addr>,<devcode>,<new status-code>  
!CHANERR,<addr>,<devcode>,<chan-num>,<new status-code>;  
!DALIERR,<addr>,<devcode>,<dali-num>,<new status-code>;  
!DALIERR,<addr>,<devcode>,<dali-fixture>,<new status-code>;  
!DMXERR,<addr>,<devcode>,<zone-num>,<new status-code>;  
!BTNERR,<addr>,<devcode>,<btn-num>,<new status-code>;  
!INPERR,<addr>,<devcode>,<chan-num>,<new status-code>;

* DALI Repair & Emergency Lighting support  
  $DALISCAN,<addr>,<devcode>;  
  $DALIREPAIR,<addr>,<devcode>,<missing dali-fixture>,  
   <new dali-fixture>;  
  $DALIACCEPT,<addr>,<devcode>,<dali-fixture>;  
  $DALIDONE;  
    
  $SHOWDALI,<addr>,<devcode>,<dali-fixture>;  
  $SHOWDALI,<addr>,<devcode>,<dali-num>;  
    
  ?DALISCAN,<addr>,<devcode>;  
  ?DALIFIX,<addr>,<devcode>;  
    
  !DALISCAN,<addr>,<devcode>,<scan-status>,<num-of-fixtures>;  
  !DALIFIX,<addr>,<devcode>,<dali-fixture>,<long-addr>,<groups>,  
   <device-type>,<fixture-status>;  
  !DALIEND,<addr>,<devcode>;  
    
  ?DALIERR,<addr>,<devcode>,<dali-fixture>;  
    
  $EMFUNC,<addr>,<devcode>,<dali-adv>;  
  $EMDURA,<addr>,<devcode>,<dali-adv>;  
  $EMSTOP,<addr>,<devcode>,<dali-adv>;  
  $EMREST,<addr>,<devcode>,<dali-adv>;  
  $EMINHIBIT,<addr>,<devcode>,<dali-adv>,<on-off>;  
  $EMSHOW,<addr>,<devcode>,<dali-adv>;  
    
  ?EMTEST,<addr>,<devcode>,<dali-fixture>;  
  !EMTEST,<addr>,<devcode>,<dali-fixture>,<em-status>,<em-failure>,  
   <em-duration>;

## System Level Messages

* Commands  
  $SCNRECALLX,<scn-num>,<scn-level>,<fadetime(ms)>;  
  $SCNOFF,<scn-num>; $SCNBACKON,<scn-num>;  
  $SCNRECALL,<scn-num>; $SCNFAST,<scn-num>;  
  $SCNRAISE,<scn-num>; $SCNLOWER,<scn-num>;  
  $SCNRAMP,<scn-num>; $SCNSTOP,<scn-num>;  
  $SCNNUDGEUP,<scn-num>; $SCNNUDGEDN,<scn-num>;  
  $SCNTOGGLE,<scn-num>; $SCNONOFF,<scn-num>;  
  $SCNSAVE,<scn-num>;  
    
  $SCNSET,<scn-num>;  
  $SCNFADE,<scn-num>,<fadetime(ms)>;  
  $SCNCHAN,<scn-num>,<addr>,<devcode>,<chan-num>,<level>;  
  $SCNDALI,<scn-num>,<addr>,<devcode>,<dali-id>,<level>;  
  $SCNDMXLEVEL,<scn-num>,<addr>,<devcode>,<zone-num>,<level>;  
  $SCNEND,<scn-num>;  
  $SCNABORT;  
    
  $DMXPALETTE,<addr>,<devcode>,<code>,<r>,<g>,<b>,<w>;
* Queries  
  ?SYSTEMID; ?ERRORS;  
    
  ?AREANAMES;   
  ?SCNNAMES; ?SCNNAMES,<area-num>;   
  ?PLATENAMES; ?PLATENAMES,<area-num>;   
  ?CHANNAMES,<scn-num>;   
  ?BTNSTYLE,<addr>,<devcode>,<btn-num>;  
  ?SCN,<scn-num>;  
  ?SCNS; ?SCNS,<area-num>;  
  ?SCNCHANS,<scn-num>;  
  ?SCNSET,<scn-num>;
* Replies & Events  
  !SYSTEMID,<serial-num>,<edit-stamp>,<adjust-stamp>;  
    
  !AREANAME,<area-num>,<access>,<content>,<area-name>;  
  !SCNNAME,<scn-num>,<access>,<area-num>,<scn-name>;  
  !PLATENAME,<addr>,<devcode>,<style>,<access>,<area-num>,<plate-name>;  
  !CHANNAME,<addr>,<devcode>,<chan-num>,<access>,<area-num>,<chan-name>;  
  !DALINAME,<addr>,<devcode>,<dali-num>,<access>,<area-num>,<chan-name>;  
  !DMXNAME,<addr>,<devcode>,<zone-num>,<access>,<area-num>,<zone-name>;  
  !BTNSTYLE,<addr>,<devcode>,<btn-num>,<icon>,<style>,<btn-name>;  
    
  !SCN,<scn-num>,<monitor-type>,<flags>,<state>;  
    
  !SCNSET,<scn-num>;!SCNFADE,<scn-num>,<fadetime(ms)>;  
  !SCNCHAN,<scn-num>,<addr>,<devcode>,<chan-num>,<level>;  
  !SCNDALI,<scn-num>,<addr>,<devcode>,<dali-num>,<level>;  
  !SCNDMXLEVEL,<scn-num>,<addr>,<devcode>,<zone-num>,<level>;  
  !SCNEND,<scn-num>;  
  !SCNABORT;

!SCNRECALLX,<scn-num>,<level>,<fadetime(ms)>;  
!SCNOFF,<scn-num>;  
!SCNRECALL,<scn-num>; !SCNFAST,<scn-num>;  
!SCNRAISE,<scn-num>; !SCNLOWER,<scn-num>;  
!SCNRAMP,<scn-num>; !SCNSTOP,<scn-num>;  
!SCNNUDGEUP,<scn-num>; !SCNNUDGEDN,<scn-num>;  
!SCNTOGGLE,<scn-num>; !SCNONOFF,<scn-num>;  
!SCNSAVE,<scn-num>; !SCNBACKON,<scn-num>;  
  
!CHAN,<addr>,<devcode>,<chan-num>,<status>,<level>,<power>,<wattage>;  
!DALI,<addr>,<devcode>,<dali-num>,<status>,<level>,<power>,<wattage>;  
!DMX,<addr>,<devcode>,<zone-num>,<status>,<mode>,<level>,<power>,  
 <wattage>;  
  
!MODUERR,<addr>,<devcode>,<new-status>  
!CHANERR,<addr>,<devcode>,<chan-num>,<new-status>;  
!DALIERR,<addr>,<devcode>,<dali-num>,<new-status>;  
!DALIERR,<addr>,<devcode>,<dali-fixture>,<new-status>;  
!DMXERR,<addr>,<devcode>,<zone-num>,<new-status>;  
!BTNERR,<addr>,<devcode>,<btn-num>,<new-status>;  
!INPERR,<addr>,<devcode>,<chan-num>,<new-status>;  
  
!DMXPALETTE,<addr>,<devcode>,<code>,<r>,<g>,<b>,<w>;

## Enumerations

* Device Codes

|  |  |  |
| --- | --- | --- |
| devCode | Product Code | Products |
| 01 | EVO-LCD-55 | LCD Wall Plate |
| 02 | EVO-SGP-xx | 2, 5 and 10 button Wall Plates,  Coolbrium & Icon plates |
| 04 | EVO-RP-03-02 | Evo 2-channel Relay Module |
| 08 | EVS-xxx | All Evo Slave Packs |
| 09 | EVO-INT\_CI\_xx | Evo 4 & 8 channel Contact Input modules |
| 12 | DIN-02-08 | eDIN 2A 8 channel dimmer module |
| 14 | DIN-03-04 | eDIN 3A 4 channel dimmer module |
| 15 | DIN-INT-00-08 | eDIN 8 channel IO module |
| 16 | DIN-RP-05-04 | eDIN 5A 4 channel relay module |
| 17 | DIN-UBC-01-05 | eDIN Universal Ballast Control module |
| 18 | DIN-COUT-00-08 | eDIN 8 channel Configurable Output module |
| 24 | ECO\_MULTISENSOR | eDIN Mk 1 Multisensor |
| 144 | DIN-RP-05-04 | eDIN 5A 4 channel mains sync relay module |
| 145 | DIN-UBC-01-05 | eDIN Universal Ballast Control 2 module |

* Contact Input and Button State

|  |  |  |
| --- | --- | --- |
|  | value | state |
|  | 0 | Release-off |
|  | 1 | Press-on |
|  | 2 | Hold-on |
|  | 5 | Short-press |
|  | 6 | Hold-off |

* PIR Input State

|  |  |  |
| --- | --- | --- |
|  | value | state |
|  | 0 | Empty |
|  | 1 | Triggered |
|  | 2 | Timeout |
|  | 3 | Set |
|  | 4 | Hold |
|  | 5 | Clear |

* Plate Styles

|  |  |  |
| --- | --- | --- |
|  | value | Products |
|  | 1 | 2, 5 and 10 button SGP Wall Plates |
|  | 2 | Coolbrium plates |
|  | 3 | Icon plates |

* eDIN Button Palette Colours

|  |  |  |
| --- | --- | --- |
|  | value | Name |
|  | 0 | Black |
|  | 1 | White |
|  | 2 | Red |
|  | 3 | Green |
|  | 4 | Blue |
|  | 5 | Orange |
|  | 6 | Cyan |
|  | 7 | Magenta |
|  | 8 | Yellow |
|  | 9 | DimWhite |
|  | 10 | DimRed |
|  | 11 | DimGreen |
|  | 12 | DimBlue |
|  | 13 | DimOrange |
|  | 14 | DimCyan |
|  | 15 | DimMagenta |
|  | 16 | DimYellow |

|  |  |  |
| --- | --- | --- |
|  | value | Name |
|  | 128 | User1 |
|  | 129 | User2 |
|  | 130 | User3 |
|  | 131 | User4 |
|  | 132 | User5 |
|  | 133 | User6 |
|  | 134 | User7 |
|  | 135 | User8 |
|  | 136 | User9 |
|  | 137 | User10 |
|  | 138 | User11 |
|  | 139 | User12 |
|  | 140 | User13 |
|  | 141 | User14 |
|  | 142 | User15 |
|  | 143 | User16 |

* eDIN DMX Palette and Modes

|  |  |  |
| --- | --- | --- |
|  | value | Mode |
|  | 1-15 | Static Colour |
|  | Palette code | Static wash using palette colour |
|  | 64-68 | Solid Colour Sequence |
|  | 64 | Long Rainbow Solid |
|  | 65 | Short Rainbow Solid |
|  | 66 | Hot Colours Solid |
|  | 67 | Cold Colours Solid |
|  | 68 | User Colours Solid |
|  | 96-100 | Ripple Colour Sequence |
|  | 96 | Long Rainbow Ripple |
|  | 97 | Short Rainbow Ripple |
|  | 98 | Hot Colours Ripple |
|  | 99 | Cold Colours Ripple |
|  | 100 | User Colours Ripple |

|  |  |  |
| --- | --- | --- |
|  | Palette code | Default Name |
|  | 1 | Red |
|  | 2 | Orange |
|  | 3 | Yellow |
|  | 4 | LawnGreen |
|  | 5 | Green |
|  | 6 | Mint |
|  | 7 | Cyan |
|  | 8 | DeepSkyBlue |
|  | 9 | Blue |
|  | 10 | Purple |
|  | 11 | Magenta |
|  | 12 | DeepPink |
|  | 13 | User1 |
|  | 14 | User2 |
|  | 15 | User3 |

* eDIN Module Palette and Modes

|  |  |  |
| --- | --- | --- |
|  | value | Mode |
|  | 1-15 | Static Colour |
|  | Palette code | Static wash using palette colour |

|  |  |  |
| --- | --- | --- |
|  | Palette code | Default Name |
|  | 1 | Red |
|  | 2 | Yellow |
|  | 3 | Green |
|  | 4 | Cyan |
|  | 5 | Blue |
|  | 6 | Magenta |
|  | 7 | UserColour |
|  | 8 | Candlelight |
|  | 9 | SoftWhite |
|  | 10 | WarmWhite |
|  | 11 | White |
|  | 12 | CoolWhite |
|  | 13 | BrightWhite |
|  | 14 | Daylight |
|  | 15 | UserTemperature |

* Status Codes

|  |  |  |  |
| --- | --- | --- | --- |
|  | value | Error | Description |
|  | 0 | Status Ok | No Errors |
|  | 2 | Device missing | Device or Module is not responding to MBus messages. |
|  | 4 | Bad Device Firmware | System is configured to use features that are not present in current module firmware. |
|  | 5 | No AC | Module uses mains AC and it does not detect any main AC power |
|  | 6 | Too Hot | The module has detected that its internal temperature is above its maximum rated operating temperature. |
|  | 10 | Channel Load Failure | The module has detected there is a problem with the external load a channel is driving |
|  | 20 | No DALI PSU | The module has detected that there is no PSU on its DALI bus. |
|  | 21 | No DALI  Commissioning Data | The DALI universe on this module does not contain any commissioning data. |
|  | 22 | DALI Commissioning problem | The module has detected that the actual DALI fixtures detected do not match with the commissioning data |
|  | 25 | DALI Lamp failure | A DALI fixture on this channel is indicating a lamp failure condition |
|  | 26 | DALI missing ballast | A DALI fixture that is in the commissioning data is not present (is not responding). |

* DALI Fixture Status Codes

|  |  |  |  |
| --- | --- | --- | --- |
|  | value | Error | Description |
|  | 0 | Ok | No Error with fixture |
|  | 1 | Lamp Failure | Fixture is reporting Lamp Failure |
|  | 2 | Missing | Fixture is not responding to messages on DALI bus. |
|  | 5 | New | Fixture is present but does not match commissioned (expected) fixture list |
|  | 9 | Unassigned | Fixture does not exist or does not have a valid DALI short address. |