Digital Addressable Lighting Interface (DALI) Reference Design

Developed by
Grampp R&D HB
in association with Motorola

Grampp R&D HB
Motorola Inc.

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Motorola MCU Reference Designs

• Application notes • Design • Software • Technical training • Hardware*

Available online at: www.motorola.com/mcu

Ready-made solution for new and emerging applications:

- Eases the design process
- Speeds time-to-market
- Introduces cost-effective design solutions
- Helps reduce development costs

* Hardware boards available on selected designs through third-party consultants.

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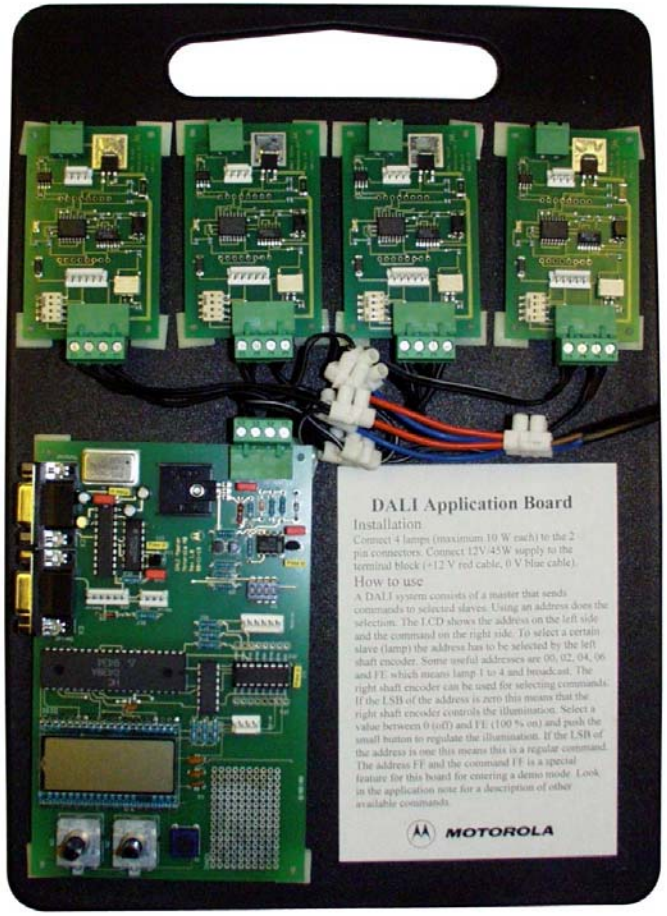
DALI Kit



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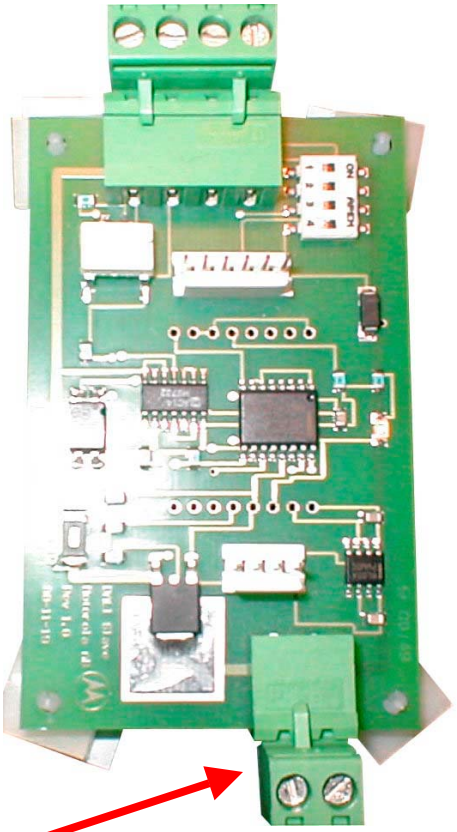
Setting Up the Boards

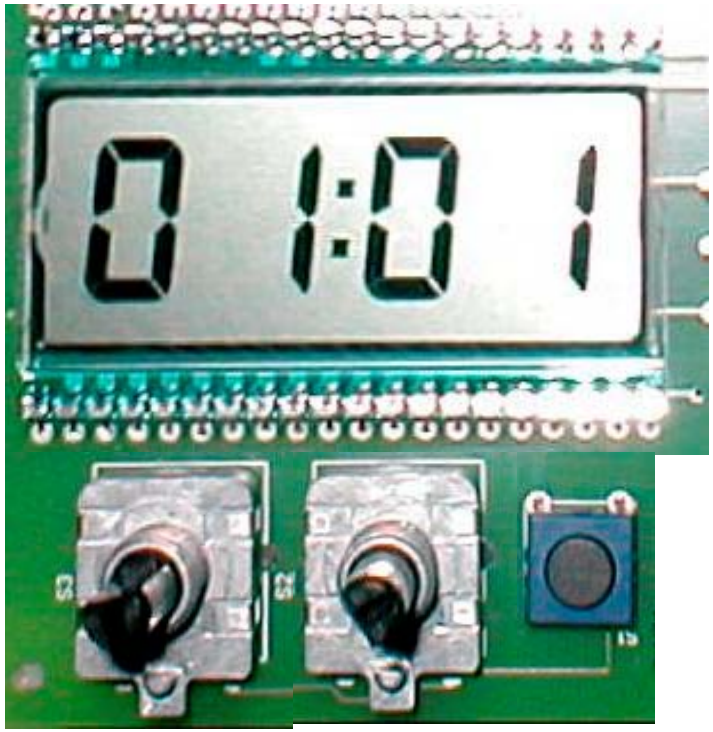
Master

Slave



Lamps

Initialization



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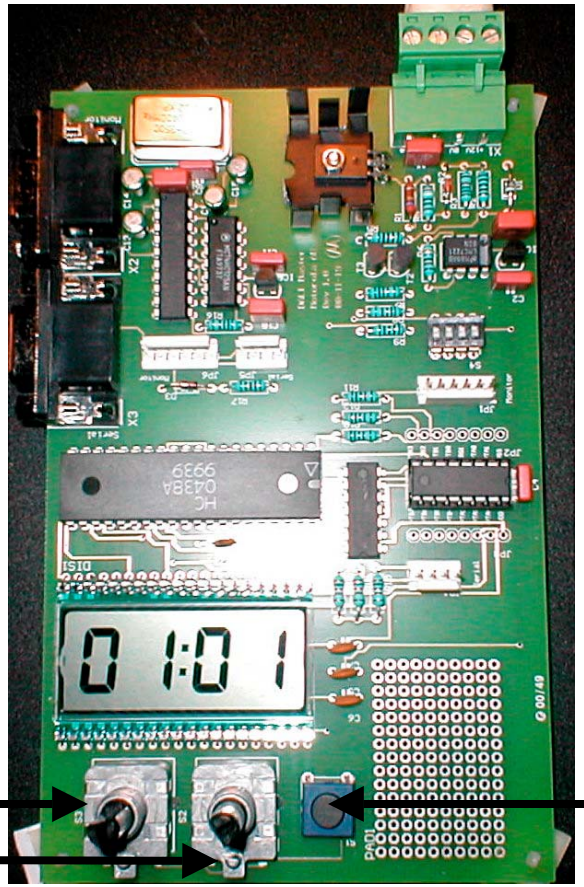
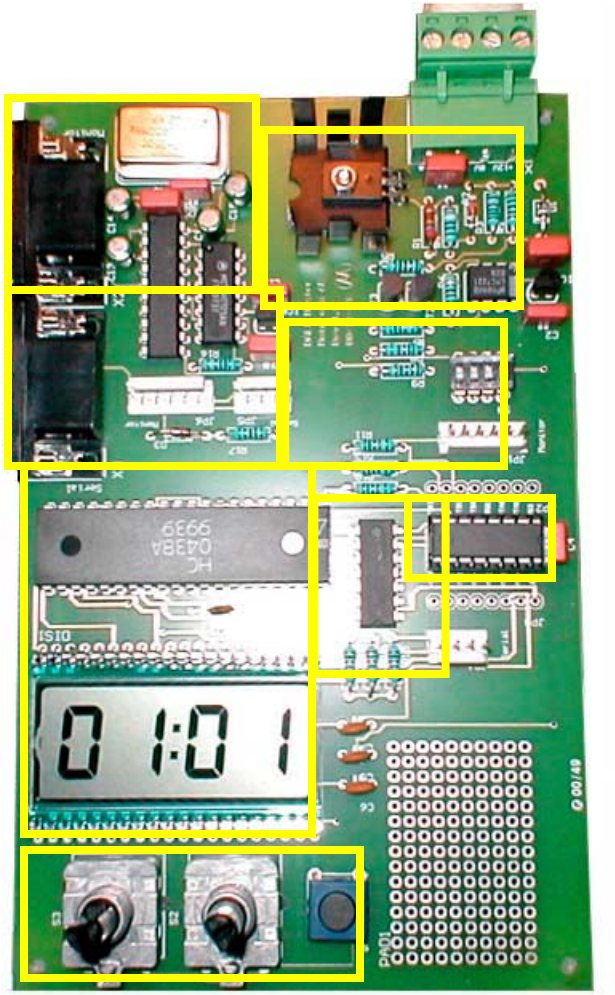
DALI Protocol



Master Unit

DALI Master Unit



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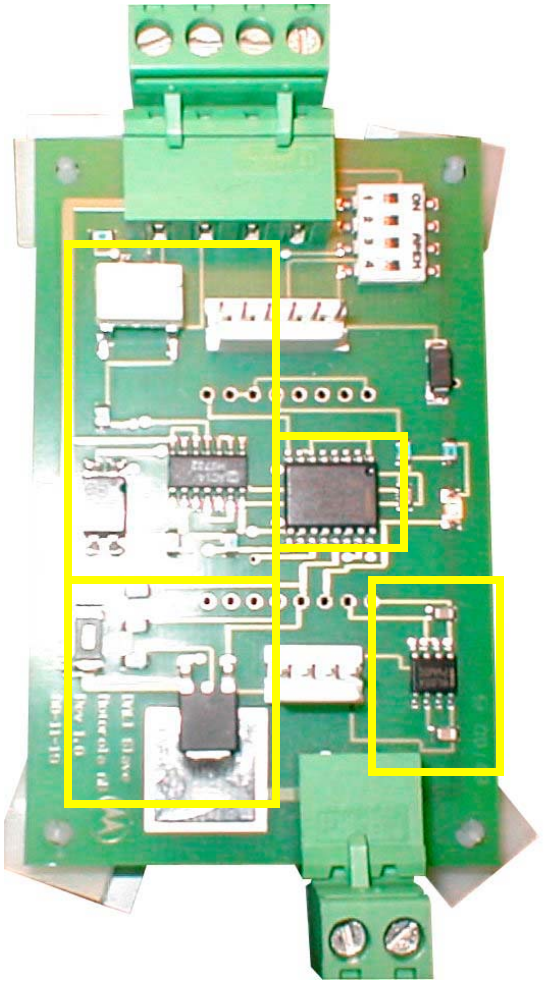
DALI Slave Unit



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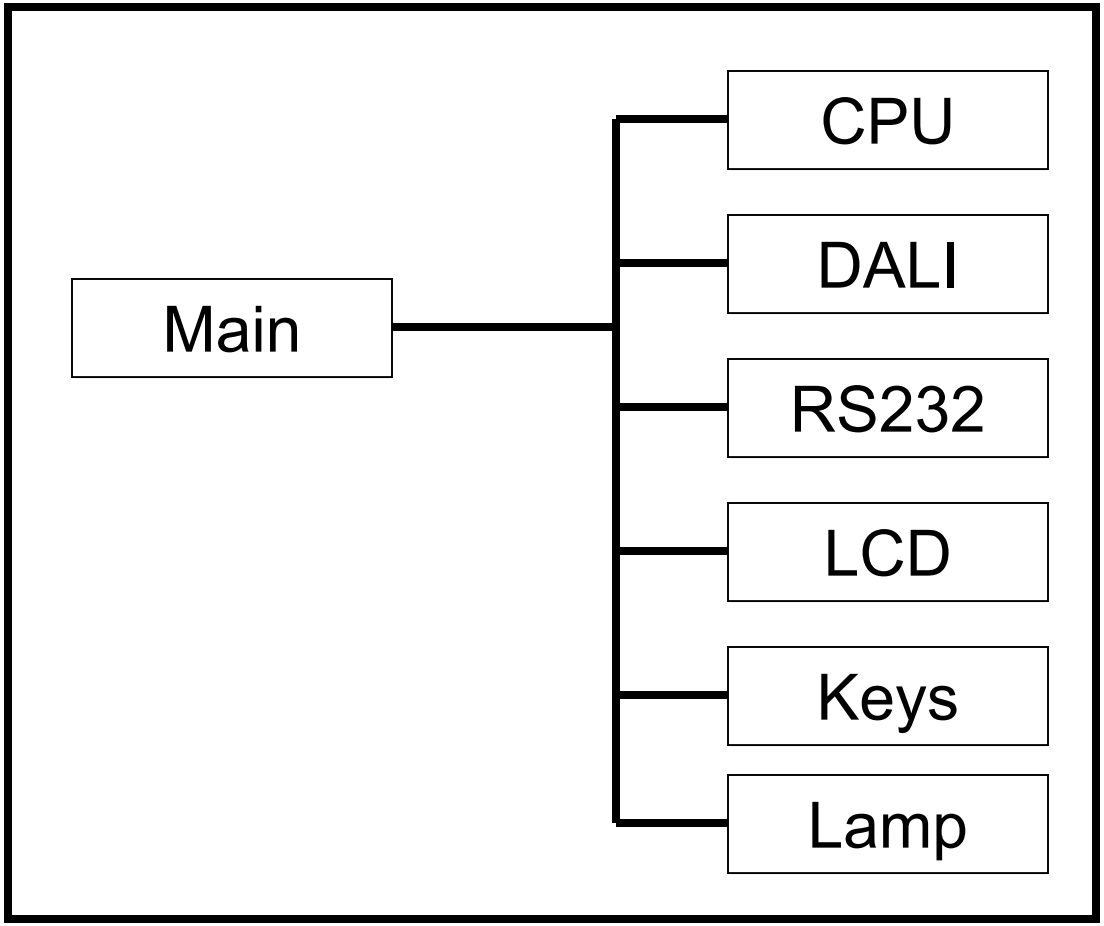
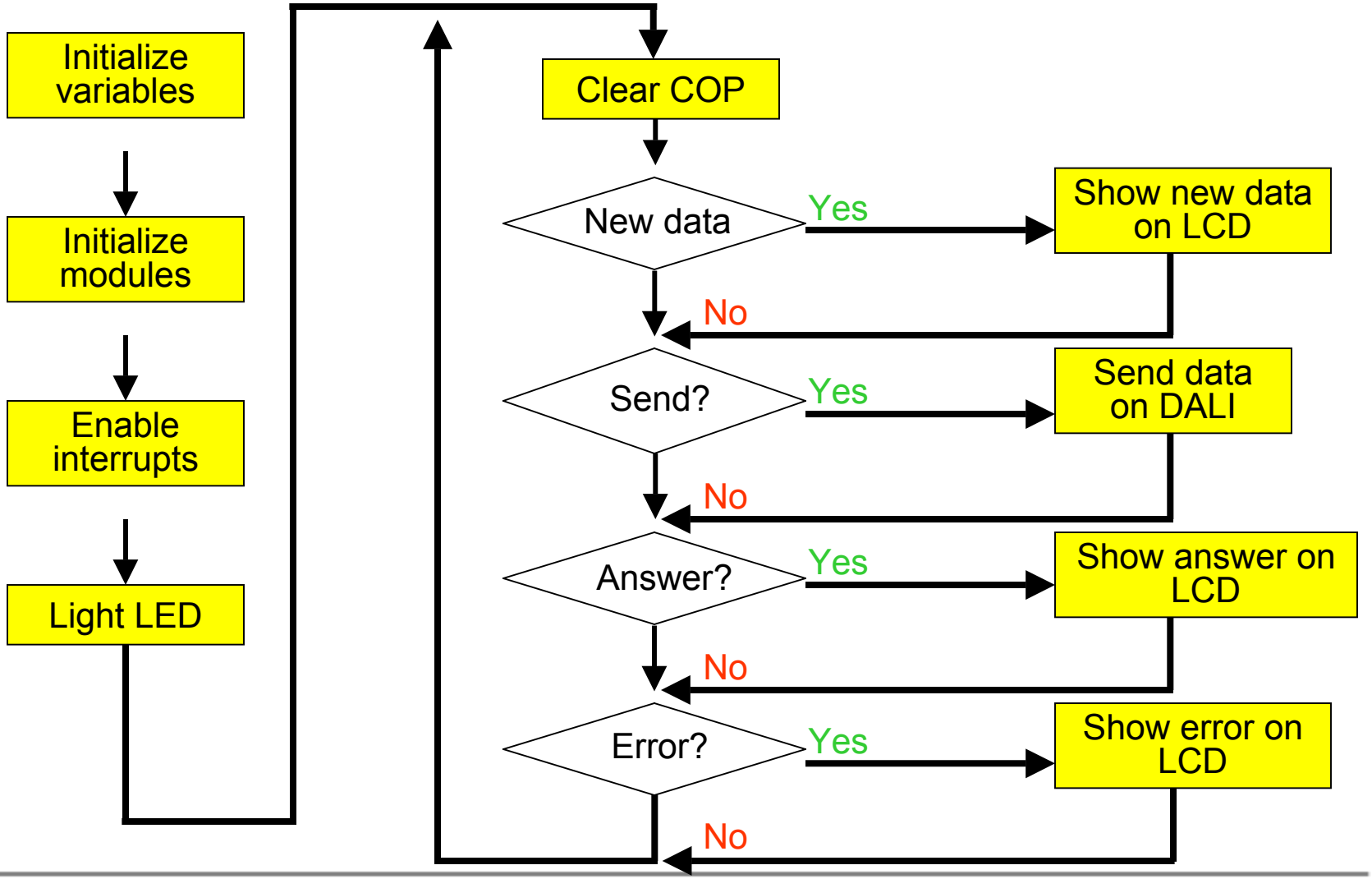
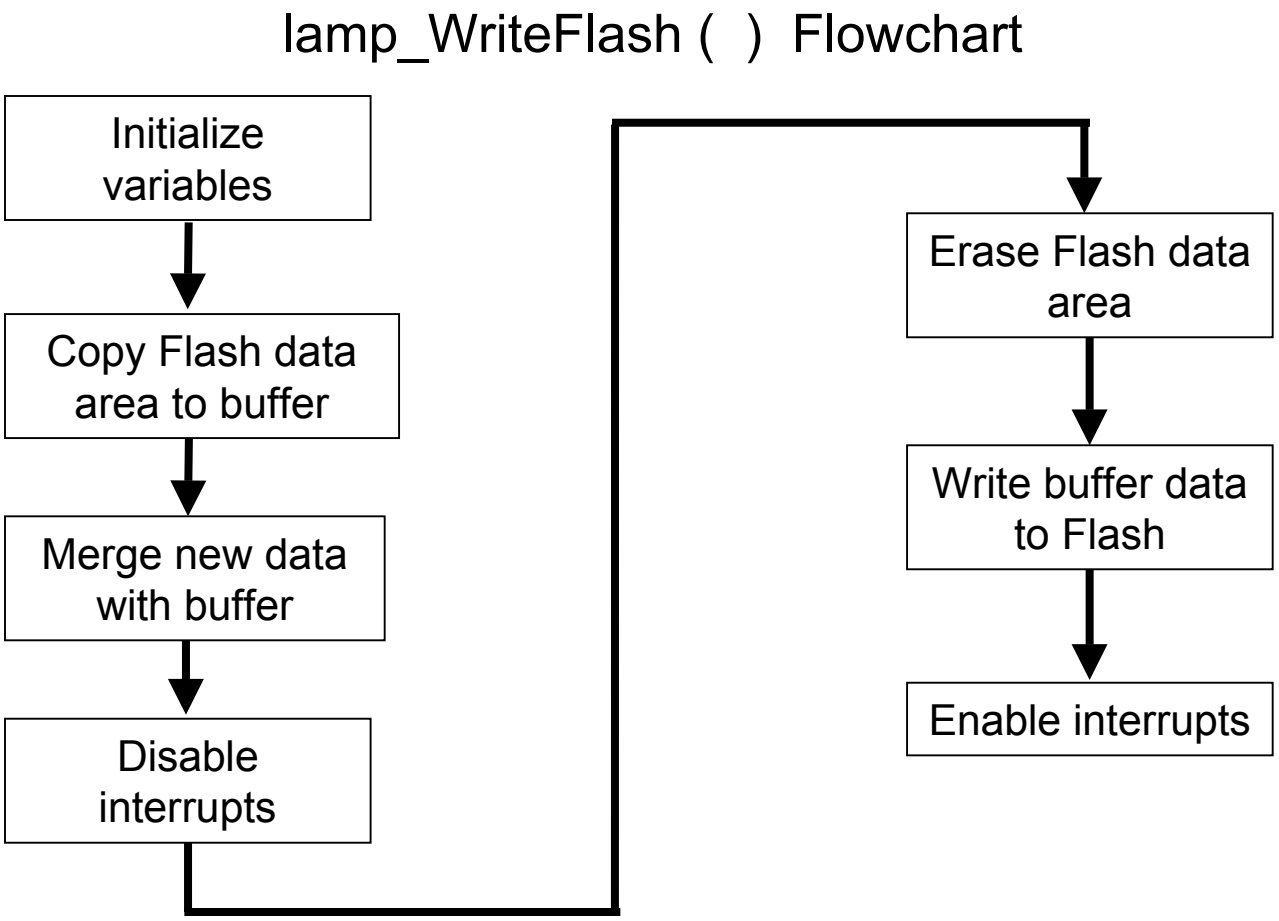
Master-Slave Software



Master-Slave Software Flowchart



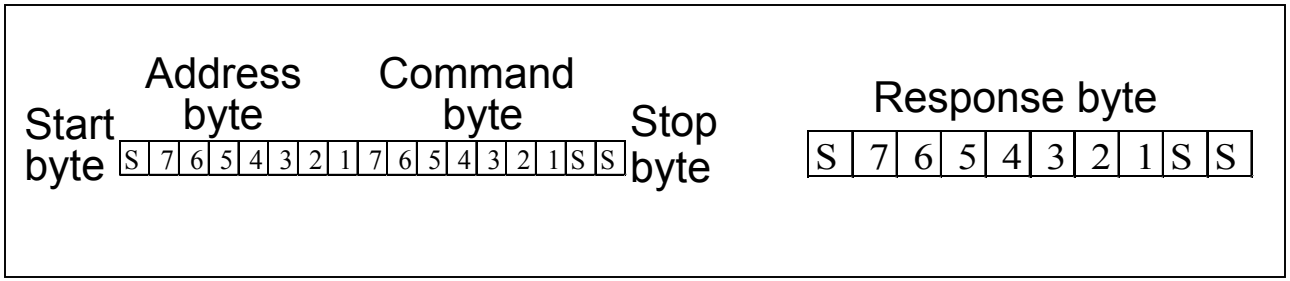
Master-Slave Software Flowchart



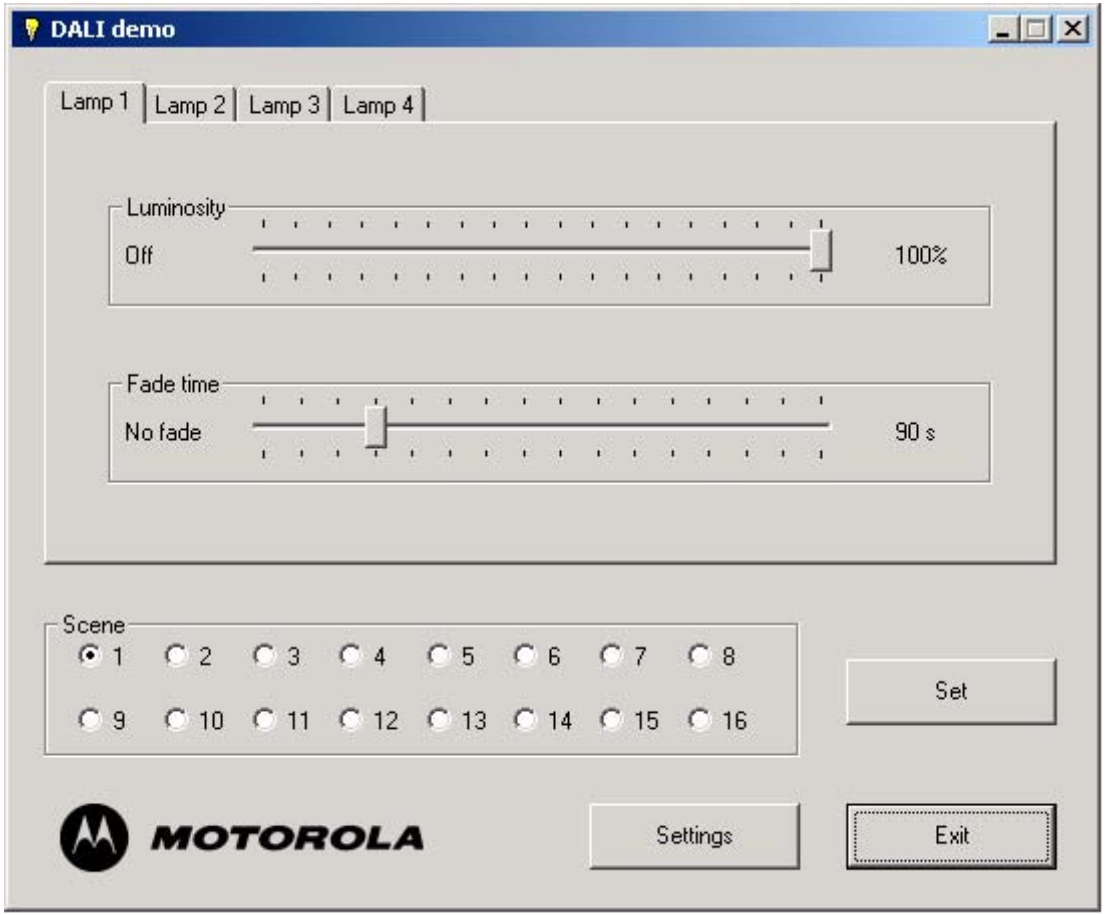
DALI Protocol Standard

Some major characteristics of the DALI protocol are:

- Asynchronous serial protocol
- 1200 baud, bi-phase encoding, half-duplex
- Two-wire differential
- Voltage difference above 9.5V means high level.
- Voltage difference below 6.5V means low level.
- Master unit controls communication.
- Sixty-four slave units can be connected.
- Each slave unit can be individually addressed.
- The master unit sends one start bit, 16 bits of data, and two stop bits.
- The slave unit sends one start bit, 8 bits data, and two stop bits.



PC Software



DALI Kit Summary

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Initial Reference Design Projects

Security Peripherals:
PIR detection and communication

Computer Peripherals and e-Commerce:
USB sensor-actuator interface

Gate Opening:
Alarm control panel

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- To determine availability of the kit, please e-mail us at S.Siddiqui@motorola.com
- **For more information about Motorola's semiconductors: www.motorola.com/semiconductors**

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