YKAMELEAN24 Host Control Software - ykam24cmd V0.1.0

User Manual

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YEPKiT

Contents

1. Overview

The ykam24cmd software is a command line application to control YKAMELEAN24 board. This open source application also serves as an example of how to use the communication and control protocol implemented in the native YKAMELEAN24 firmware.

2. Command structure

Commands have the following structure.

```
ykam24cmd <interface> <command> <specific option 1>...<specific option N>
```

- **interface** - The interface/scope (e.g., gpio).
- **command** - Command to be executed.
- **specific options** - Options for the command on that specific interface/scope.

The following interfaces/scopes are supported by the current version of the software.

- **gpio** - Interface to control GPIO's.
- **ykemb** - Interface for communication with the YKEMB memory board.

3. GPIO interface

Interface to read and write to the board GPIO pins. The following GPIO pins are available in the board.

Pin	I/O	Input Buffer Type
RB15	Input/Output	Schmitt Trigger
RB14	Input/Output	Schmitt Trigger
RB13	Input/Output	Schmitt Trigger
RB3	Input/Output	Schmitt Trigger
RA1	Input/Output	Schmitt Trigger
RB9	Input/Output	Schmitt Trigger
RB8	Input/Output	Schmitt Trigger
RB7	Input/Output	Schmitt Trigger
RB4	Input only	Schmitt Trigger
RB1	Input/Output	Schmitt Trigger
RA0	Input/Output	Schmitt Trigger
RA2	Input/Output	Schmitt Trigger
RA3	Input/Output	Schmitt Trigger
RA4	Input only	Schmitt Trigger
RB2	Input/Output	Schmitt Trigger

3.1. Write command

```
ykam24cmd gpio -w <pin> <value>
```

- **pin** - Pin name as listed in the previous table and printed in the YKAMELEAN24 board. Please note that the pin option is case sensitive and should be introduced in upper-case (e.g., RB14 instead of rb14).

- **value** - Value to be set in the pin. A value of **1** sets the pin to **High** and a value of **0** sets the pin to **Low**.

3.2. Read command

```
ykam24cmd gpio -r <pin>
```

Where `pin` is the pin name as listed in the table above and printed in the Ykamelean24 board. Please note that the pin option is case sensitive and should be introduced in upper-case (e.g., RB14 instead of rb14).

The read value will be returned by the command where **1** indicates that the GPIO is at **High** level and **0** indicates that the GPIO is at **Low** level.

4. YKEMB interface

YKEMB memory board interface to read and write data. This interface supports two commands, the WRITE and READ command.

4.1. Write command

```
ykam24cmd ykemb -w <i2c_addr> 0x<addr_H> 0x<addr_L> 0x<byte>
```

- **i2c_addr** - I^2C address for the YKEMB device to which the command is addressed. The address is the three bits in binary format (e.g., 010) defined by the three way DIP switch on the YKEMB board .

- **addr_H** - Most significant byte of the two byte memory address in hexadecimal format (e.g., A2).

- **addr_L** - Less significant byte of the two byte memory address in hexadecimal format (e.g., FA).

- **byte** - Byte to be written.

4.2. Read command

```
ykam24cmd ykemb -r <i2c_addr> 0x<addr_H> 0x<addr_L>
```

- **i2c_addr** - I^2C address for the YKEMB device to which the command is addressed. The address is the three bits defined by the slide buttons on the YKEMB board in binary format (e.g., 010).

- **addr_H** - Most significant byte of the two byte memory address to be read in hexadecimal format (e.g., A2).

- **addr_L** - Less significant byte of the two byte memory address to be read in hexadecimal format (e.g., FA).

A.   Revisions

- **Current version** V0.1.0 - Initial release