AskSin library  
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Framework for developing own HomeMatic® network compatible devices based on the Arduino platform.

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# Intend & License

Intend of this Library is to simplify the development of new devices for an existing HomeMatic® network.

All protocol related communication should be handled in a class module; device related communication (e.g. status message sending) is handled by function calls; incoming messages (e.g. Switch, Remote events) are handled as events and forwarded to user specific modules.

The library should be as compatible as possible and support all 3 types of different device types. (SWITCH, SENSOR, ACTUATOR). Power management features and also battery measurement is included, to support development of battery powered devices.

Base for this library is the CC1101 communication chip from TI and the Atmel AVR328. A user ready module is available under the label of Panstamp®.

The library is Arduino compatible and should be used only via the Arduino Framework. Never the less, all hardware related functions/macros are consolidated on one place (HAL.h and HAL.cpp). Therefor it should be easy to port the library to a new platform.

As the library is a pure hobby for me, you will get some limited support at the FHEM forum in the respective area. The library is still at beta status and will probably never leave.

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# HomeMatic communication overview

HomeMatic protocol is a bidirectional protocol with the advantage of a more stable communication due to getting ACK‘s on successful transitions.

Master

Sensor

Actuator

Actuator

Switch

Pair

Peer

There are two types of different communication.

* Master <-> Device communication as pair
* Device <-> Device communication as peer

Pair communication is for client configuration, reading status messages and some simple control of clients. Also peer setup is done via Pair communication.

Main advantage of HomeMatic protocol is the peer communication. By setting up a proper interconnection between peers, a full home automation is possible, without having a master in place.

## Configuration – Pairing

Master

Client

DEVICE\_INFO

ACK

CONFIG\_START

ACK

CONFIG\_WRITE\_INDEX

ACK

CONFIG\_END

ACK

Send device info to master

Enable Eeprom to store new settings

Send new settings

Write to Eeprom

Flow above shows a typical configuration session for a client device. By pressing the configuration button on the client device, a message containing device information's will send to the master.

By this message the master will recognize if there is a new device in the network and will send the configuration enable flag. Based on this flag, client device will enable the respective list and wait for the configuration settings.

With CONFIG\_WRITE\_INDEX the master transmits the respective settings to the write enabled list. If it is a pairing string, there will be at least the address of the master written to the client device. To store the provided settings the master will send a CONFIG\_END string to the client.

## Configuration – Peering

Master

Remote

DEVICE\_INFO

ACK

CONFIG\_START

ACK

CONFIG\_WRITE\_INDEX

ACK

CONFIG\_END

ACK

Send device info to master

Enable Eeprom to store new settings

Send new settings

Write to Eeprom

Actuator

to be reworked