Smart House

Light Switch
module

Features

Dimensions: 50 mm x 15 mm.

Power supply 7 to 15 volts.

Maximum consumption current 9 ma.

Interface RS485.

Protocols: Modbus ASCII and RTU.

Three inputs for buttons.

Three outputs for leds.

Temperature sensor.

One output for IR led.

One input for IR sensor.

Buttons input state detection.

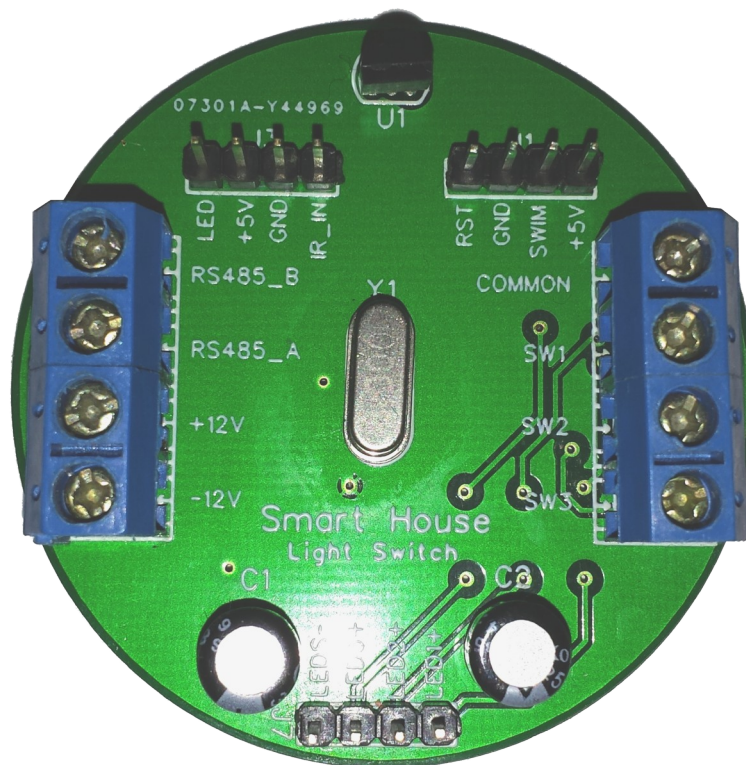Buttons push and pull edge detection.

Buttons holding time measurement.

Leds output control.

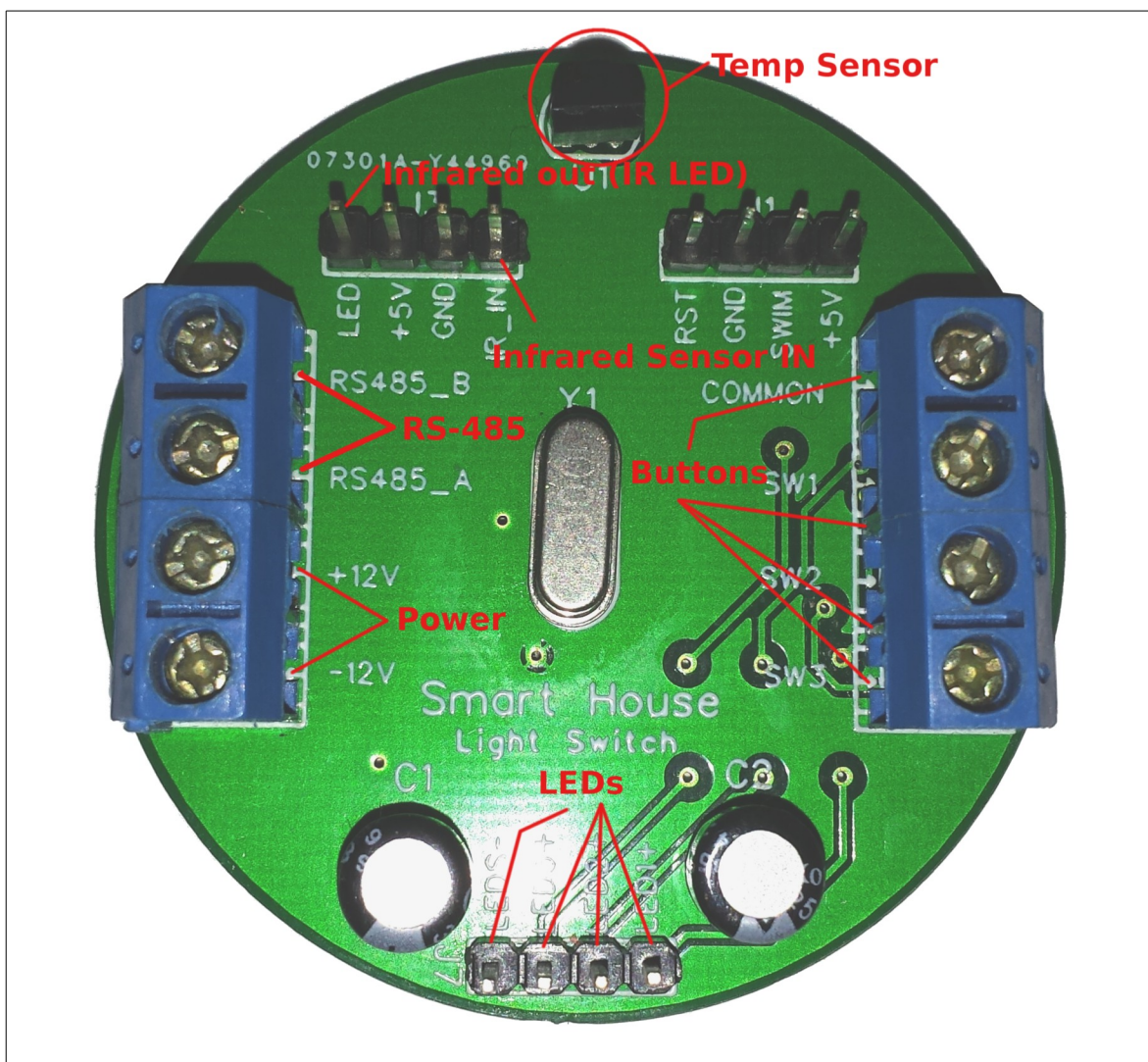Infrared remote control commands receive and decode.

Infrared remote control commands transmit.

Temperature sensor -40 to +85 C

Description

      Smart house light switch module is a complex device for home automation. Module designed to install into switch box in the wall. It performs four main functions: switch buttons state detection and there highlighting, receive and decode infrared remote control signals, transmit infrared remote control signals, measurement surround temperature.

Modbus registers.

Address	Name	Description
0	Device address	Register contains modbus address of the device. Supported values from 1 to 247. Default value: 1
1	Modbus mode	Register contains modbus mode of operation. Supported modes are «ASCII» and «RTU». 0 - means «Modbus ASCII mode», 7 data bits. 1 - means «Modbus RTU mode», 8 data bits. Default value: 1
2	Baud rate	RS485 interface baud rate configuration: 0 – 4800 bps 1 – 9600 bps 2 – 19200 bps 3 – 38400 bps 4 – 57600 bps 5 – 115200 bps Default value: 5
3	Parity	Configure RS485 parity mode: 0 – no parity, 2 stop bits («8N2» or «7N2») 1 – even, 1 stop bit («8E1» or «7E1») 2 – odd, 1 stop bit («8O1» or «7O1») Default value: 0
4	Save serial config	By default, values of registers 0 to 3 saved into volatile memory, and settings applied. Writing «A251 hex» to register 4 will transfer registers 0 to 4 into non-volatile memory. Default value: Read as 0 Write 0xA251, to save serial settings. Other values are ignored.
5	Buttons state	Register contains real time bit mask of buttons pressed. Bit 0 = 1, if «SW1» pin is closed to «COMMON» Bit 1 = 1, if «SW2» pin is closed to «COMMON» Bit 2 = 1, if «SW3» pin is closed to «COMMON» Example: Value 0x06, means «SW2» and «SW3» are closed to «COMMON» Default value: 0

6	Buttons push edge detection	Register contains edge triggered bit mask. Each bit set to «1» when button pushed. Writing «1» to bit will clear appropriate bit in registers 6,7 and appropriate time in registers 8 to 10. Bit 0 set to «1» when «SW1» pin was closed to «COMMON» Bit 1 set to «1» when «SW2» pin was closed to «COMMON» Bit 2 set to «1» when «SW3» pin was closed to «COMMON»
7	Buttons pull edge detection	Register contains edge triggered bit mask. Each bit set to «1» when button pulled. Writing «1» to bit will clear appropriate bit in registers 6,7 and appropriate time in registers 8 to 10. Bit 0 set to «1» when «SW1» pin disconnected from «COMMON» Bit 1 set to «1» when «SW2» pin disconnected from «COMMON» Bit 2 set to «1» when «SW3» pin disconnected from «COMMON»
8	Button 1 push time	Register contains time in millisecond from the moment when pin «SW1» connected to «COMMON» till it was disconnected. If time larger then 65535 value will be 65535.
9	Button 2 push time	Register contains time in millisecond from the moment when pin «SW2» connected to «COMMON» till it was disconnected. If time larger then 65535 value will be 65535.
10	Button 3 push time	Register contains time in millisecond from the moment when pin «SW3» connected to «COMMON» till it was disconnected. If time larger then 65535 value will be 65535.
11	Temp °C	Register contains temperature in 0.0625°C, or value 21845 (5555 hex) when temperature is not measured yet.
12	Led control	Each bit 0 to 2 of register associated with LEDs. Writing 1 to appropriated bit will enable power on associated led pin. Bit 0 = 1 means «LED1» pin will set to high level Bit 1 = 1 means «LED2» pin will set to high level Bit 2 = 1 means «LED3» pin will set to high level

		Writing 0 to appropriate bit will set level of pin to low.
13	IR command length	Nec protocol command length in bits. In receive mode this register contains length in bits of received IR command. To clear IR receive buffer, write value 0 to 31. In transmit mode write value 32 to 96. It will mean IR command length in bits. After that write pulse & preamble length. Then write IR data. When last bit of IR data will be written, IR frame will transmitted.
14	IR pulse length	NEC IR preamble pulse length in microseconds. Different infrared remote control uses NEC protocol. But usually different preamble and preamble pause length used. This field contains preamble pulse time in microseconds
15	IR pause length	NEC IR preamble pause length in microseconds Different infrared remote control uses NEC protocol. But usually different preamble and preamble pause length used. This field contains preamble pause time in microseconds
16 to 21	IR data	NEC IR bits of the frame This registers contains NEC protocol data, transferred over infrared. Usually 32 or 96 bits of data used.