

HDL[®]

**IR Emitter module
HDL-MIR04.40**



Description

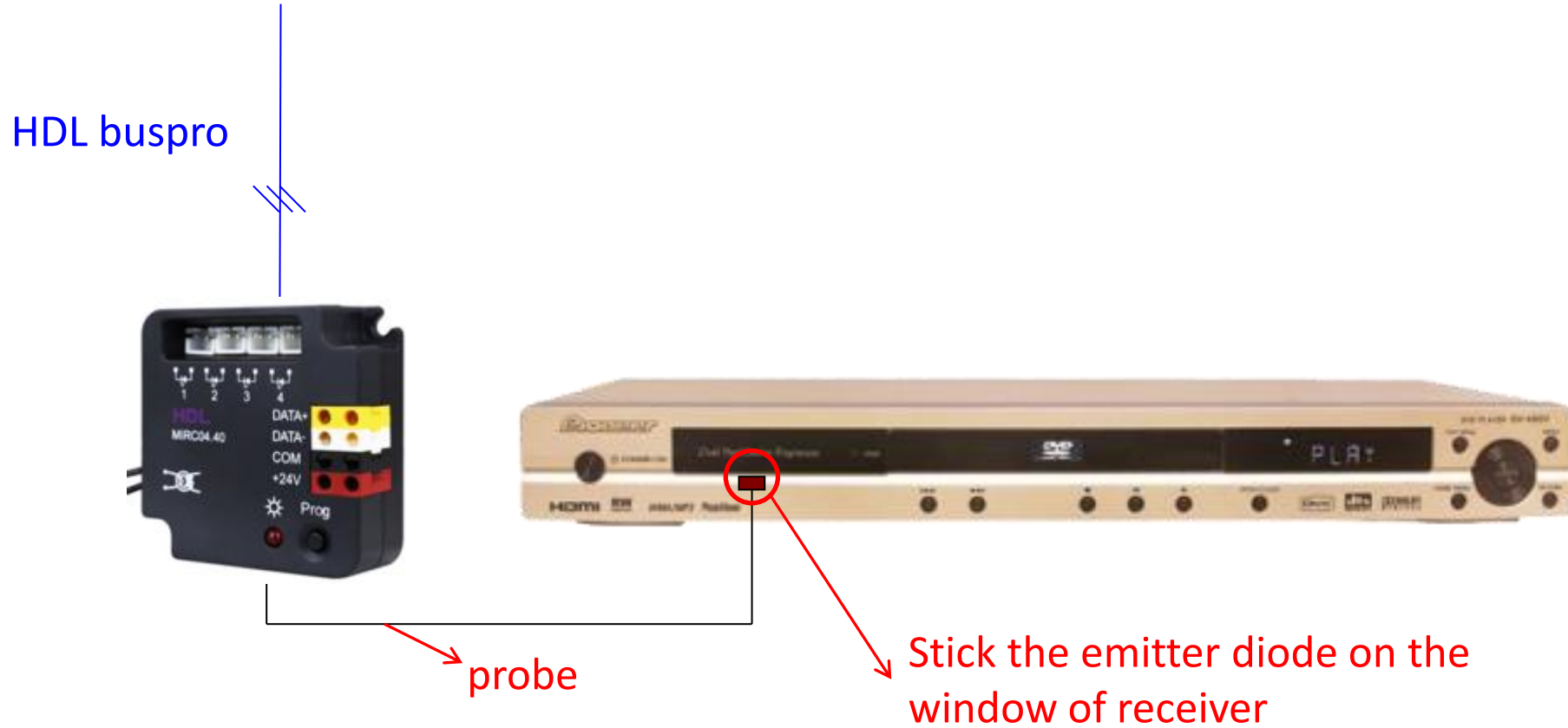
HDL-MIRC04.40 is the IR code sending device, and 100 infrared codes can be stored in it. By using the HDL IR learner (another device) to learn the IR codes from the normal remote, and downloaded into this device. The software can program and use the IR codes to control the IR device, such as TV, DVD, AC, Amplifier, etc.



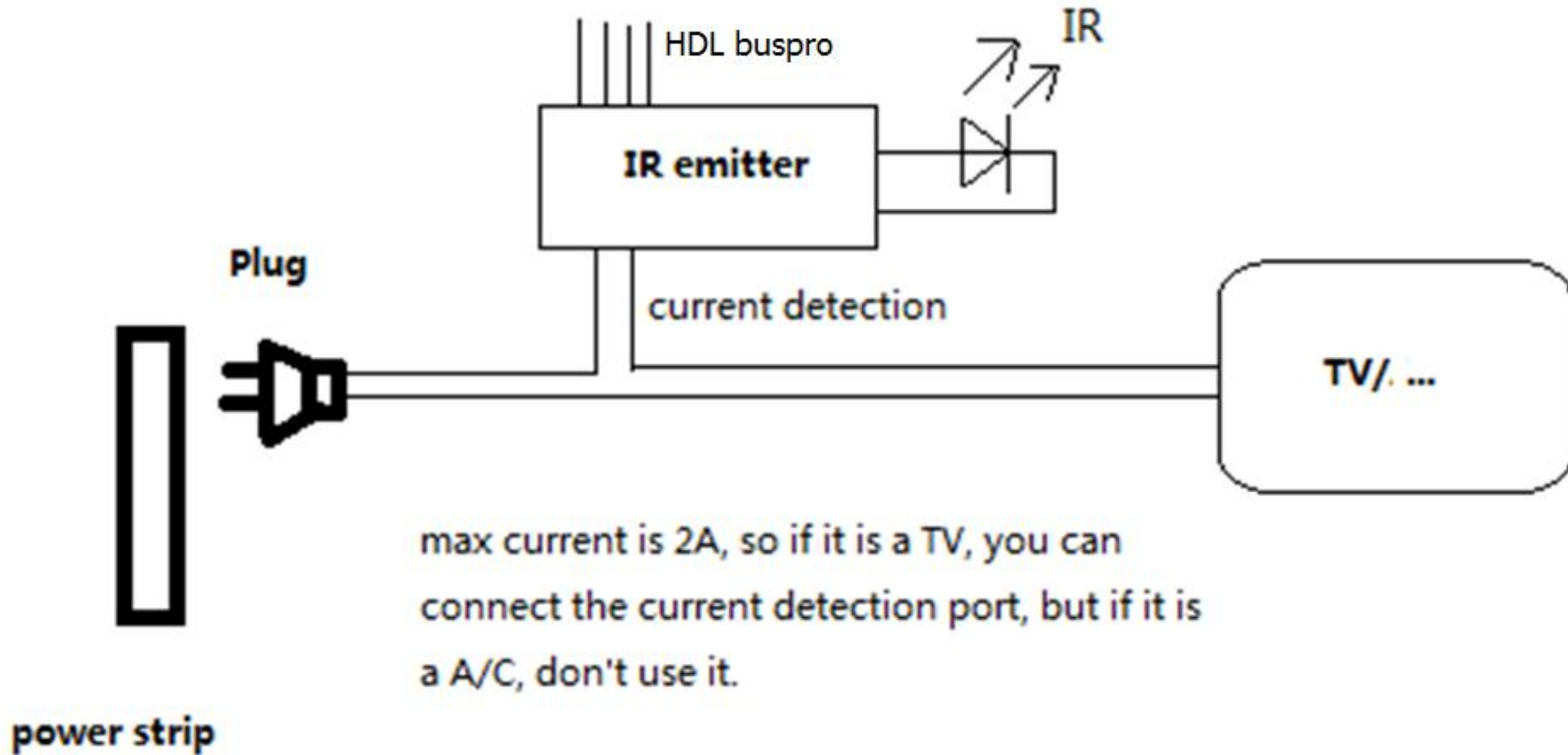
Main functions

- ◆ Current detecting function for identify device ON/OFF status.
- ◆ Maximum 100 IR Codes can be stored.
- ◆ To send the IR codes by using a IR LED.
- ◆ Support upgrade from HDL Buspro.

connecting



Current Detection Wiring



IR Codes Page

Index	Device	Name	Test
1	AC	DAIKIN-AC-001	Send
2	Fan		Send
3	AC	DAIKIN-AC-002	Send
4	N/A		Send
1	TV	ALDISPLAY-TV-001	Send
2	Projecter		Send
3	Projecter		Send
4	Projecter		Send
5	Projecter		Send
6	Projecter		Send
7	Projecter		Send
8	TV	ADL-TV-001	Send
9	N/A		Send
10	N/A		Send
11	N/A		Send
12	N/A		Send
13	N/A		Send
14	N/A		Send
15	N/A		Send
16			
17			
18			
19			
20			

1. From index 1 to index 4 in red area is used for storing the IR code of AC brand

2. From index 1 to index 24 in yellow area is used for storing the IR code of the devices except AC.

In the IR codes page, We can directly select the IR code that are stored in the IR module, no need to learn the IR code from IR learn, the default IR library contain most of popular IR code.

Device: | 10-1\

Save & Close

IR Codes Page

The screenshot shows the 'IR codes' tab in the software. A table lists existing codes, and a right-hand panel allows for adding a new one. Five steps are highlighted with red callouts:

- 1. Select the index**: Points to the first row of the table.
- 2. Select the remote type**: Points to the 'AC' selection in the 'Please select remote type' dropdown.
- 3. Select the brand**: Points to 'DAIKIN' in the '1)Brand' list.
- 4. Select the model**: Points to 'AC-001' in the '(2)Current model list'.
- 5. Save**: Points to the 'Save' button in the 'Test and control' section.

Index	Device	Name	Test
1	AC	DAIKIN-AC-001	Send
2	Fan		Send
3	AC	DAIKIN-AC-002	Send
4	N/A		Send
1	TV	ALDISPLAY-TV-001	Send
2	Projecter		Send
3	Projecter		Send
4	Projecter		Send
5	Projecter		Send
8	TV	ADL-TV-001	Send
9	N/A		Send
10	N/A		Send
11	N/A		Send
12	N/A		Send
13	N/A		Send
14	N/A		Send
15	N/A		Send
16	N/A		Send
17	N/A		Send
18	N/A		Send
19	N/A		Send
20	N/A		Send

IR Codes Page

The screenshot displays the HDL software interface for managing IR codes. On the left, a table lists various devices and their corresponding IR codes. On the right, a configuration panel allows for selecting a remote type and testing the code. A red text box provides instructions on how to manually test the IR code.

Index	Device	Name	Test
1	AC	DAIKIN-AC--001	Send
2	Fan		Send
3	AC	DAIKIN-AC--002	Send
4	N/A		Send
1	TV	ALDISPLAY-TV--001	Send
2	Projecter		Send
3	Projecter		Send
4	Projecter		Send
5	Projecter		Send
6	Projecter		Send
7	Projecter		Send
8			
9			
10			
11			
12			
13			
14			
15	N/A		Send
16	N/A		Send
17	N/A		Send
18	N/A		Send
19	N/A		Send
20	N/A		Send

Please select remote type

Channel: 1

Power status: Open Mode: Cooling

FAN: Auto Wind: Close

Temperature: 16C

Current Brand: DAIKIN

Test and control

Auto Test: Auto Interval: 1 (S)

Start Auto

Before save the IR code, we can manual test the IR code from the upper right corner of the small window, also can select "Start Auto" button to test.

IR Learner Page

The screenshot shows the 'IR learner' tab of the HDL software. At the top, there are tabs for 'Basic information', 'IR codes', 'IR learner', 'Universal switch setting', 'Sequence', and 'Current detection'. Below these, there are input fields for 'Input key number(1-180)' with 'From' and 'To' set to 1, and a 'Sure' button. A table lists 21 keys with their names, validity, and delete buttons. To the right, a tree view shows various IR code categories, with 'Test' expanded to show 'ON', 'OFF', 'H-C-20', 'H-C-21', and 'H-C-22'. At the bottom, there are buttons for 'IR learner', 'Upload IR', and 'Stop uploading', along with 'Current selected key' and 'Channel' dropdowns, and a 'Test IR codes' button. A bottom toolbar contains 'Initial all key', a save icon, a delete icon, and 'Save & Close'.

Key	Name	Valid	Delete
1	Test-ON	Valid	Delete
2	Test-OFF	Valid	Delete
3	Test-H-C-20	Valid	Delete
4	Test-H-C-21	Valid	Delete
5	Test-H-C-22	Valid	Delete
6		Invalid	Delete
7		Invalid	Delete
8		Invalid	Delete
9		Invalid	Delete
10		Invalid	Delete
11		Invalid	Delete
12		Invalid	Delete
13		Invalid	Delete
14		Invalid	Delete
15		Invalid	Delete
16		Invalid	Delete
17		Invalid	Delete
18		Invalid	Delete
19		Invalid	Delete
20		Invalid	Delete
21		Invalid	Delete

1. Select the IR codes which you want to use.

2. Select the position which you want to start to upload.

3. Start to upload to this module

4. Test the current key's IR code

5. Save

Attention: this page is used for uploading the IR code that is learnt from the IR learner.

Universal Switch Setting

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Basic information | IR codes | IR learner | Universal switch setting | Sequence | Current detection

Input universal switch number(1-99): From To

ID	Device	Channel	Parameter 1	Parameter 2	More parameters	More parameters	More parameters	Temperature
1-ON	29-Choose Key OF Learn	1	1(Key Function)	0(Resend Times)	0.1(Resend Dela...	OFF(Current Det...	N/A	N/A
1-OFF	Invalid	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-ON	29-Choose Key OF Learn	1	2(Key Function)	0(Resend Times)	0.1(Resend Dela...	OFF(Current Det...	N/A	N/A
2-OFF	Invalid	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-ON	29-Choose Key OF Learn	1	3(Key Function)	0(Resend Times)	0.1(Resend Dela...	OFF(Current Det...	N/A	N/A
3-OFF	Invalid	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4-ON	29-Choose Key OF Learn	1	4(Key Function)	0(Resend Times)	0.1(Resend Dela...	OFF(Current Det...	N/A	N/A
4-OFF	Invalid	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5-ON	29-Choose Key OF Learn	1						
5-OFF	Invalid	N/A						

3. Select the channel of IR module, if select 1, the IR code will be sent from channel 1.

2. We can select the IR code sources form the device column.

1. The ID column is the UV switch number.

If we want to trigger the IR code with UV switch number, we can set from the universal switch page.

Device: | 10-1\

Universal Switch Setting

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Basic information | IR codes | IR learner | **Universal switch setting** | Sequence | Current detection

Input universal switch number(1-99): From To

ID	Device	Channel	Parameter 1	Parameter 2	More parameters	More parameters	More parameters	Temperature
1-ON	29-Choose Key OF Learn	1	1(Key Function)	0(Resend Times)	0.1(Resend Dela...	OFF(Current Det...	N/A	N/A
1-OFF	Invalid	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-ON	29-Choose Key OF Learn	1	2(Key Function)	0(Resend Times)	0.1(Resend Dela...	OFF(Current Det...	N/A	N/A
2-OFF	Invalid	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-ON	29-Choose Key OF Learn	1	3(Key Function)	0(Resend Times)	0.1(Resend Dela...	OFF(Current Det...	N/A	N/A
3-OFF	Invalid	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4-ON	29-Choose Key OF Learn	1	4(Key Function)	0(Resend Times)	0.1(Resend Dela...	OFF(Current Det...	N/A	N/A
4-OFF	Invalid	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5-ON	29-Choose Key OF Learn	1	5(Key Function)	0(Resend Times)	0.1(Resend Dela...	OFF(Current Det...	N/A	N/A
5-OFF	Invalid	N/A	N/A	N/A	N/A	N/A	N/A	N/A

4. Select the IR code in here, for example, if the code is from IR learner, the number means the key number in IR learner page.

5. Normally set the resend times as 0

Device: | 10-1\

Sequence

1. Enable the sequence

2. Select the UV switch number

Step	Channel	Delay(S)	Parameter 1	Parameter 2	parameters	parameters	More parameters	Temperature
1	1	0	1(Key Function)	0(Resend Times)	0.1(Resend De...	OFF(Current D...	N/A	N/A
2	1	0	2(Key Function)	0(Resend Times)	0.1(Resend Del...	OFF(Current Det...	N/A	N/A
3	1	0	3(Key Function)	0(Resend Times)	0.1(Resend De...	OFF(Current D...	N/A	N/A
4	1	0	4(Key Function)	0(Resend Times)	0.1(Resend Del...	OFF(Current Det...	N/A	N/A
5	1	0	5(Key Function)	0(Resend Times)	0.1(Resend De...	OFF(Current D...	N/A	N/A
6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
16	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
17	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

If we want to send several code one by one with a button, then we can use the sequence function

Sequence

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Basic information | IR codes | IR learner | Universal switch setting | **Sequence** | Current detection

Choose sequence: 1(Universal Switch-201) < >

Sequence enable Sequence remark:

Step

Index	Device	Channel	Delay(S)	Parameter 1	Parameter 2	More parameters	More parameters	More parameters	Temperature
1	29-Choose Key OF Learn	1	0	1(Key Function)	0(Resend Times)	0.1(Resend De...	OFF(Current D...	N/A	N/A
2	29-Choose Key OF Learn	1	0	2(Key Function)	0(Resend Times)	0.1(Resend Del...	OFF(Current Det...	N/A	N/A
3	29-Choose Key OF Learn	1	0	3(Key Function)	0(Resend Times)	0.1(Resend De...	OFF(Current D...	N/A	N/A
4	29-Choose Key OF Learn	1	0	4(Key Function)	0(Resend Times)	0.1(Resend Del...	OFF(Current Det...	N/A	N/A
5	29-Choose Key OF Learn	1	0	5(Key Function)	0(Resend Times)	0.1(Resend De...	OFF(Current D...	N/A	N/A
6	Invalid	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	Invalid	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8								N/A	N/A
9								N/A	N/A
10	Invalid	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11	Invalid	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12	Invalid	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
13	Invalid	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
14	Invalid	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
15	Invalid	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
16	Invalid	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
17	Invalid	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
18	Invalid	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19	Invalid	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

3. Fill in the IR code you want to send, select the channel, delay time

4. Save

Save & Close

Device: | 10-1\

Current detection

10-1 Settings for current detection:

Basic information IR codes IR learner Universal switch setting Sequence **Current detection**

Load of target setup

Waiting time for load: (S)

Standby current:

Device type:

Power key:

Load status: OFF

Current detection

Working current value: 0

Current value when OFF: 0

Average value: 0

Load universal switch No.

Select the switch code.

After we use the current detection. (when detected current > standby current, HDL-MIRC04.40 will reject to send ON command; when detected current < standby current, HDL-MIRC04.40 will reject to send OFF command.)

If current detection port has been connected as the first slide shows. You can set the TV works in standby mode and get the standby current. (the SB-IR-EM then can tell the TV is on (detected current > standby current) or off (detected current < standby current).)

Current detection

How to use current detection: (if the ON/OFF codes are the same)

Steps:

- Connect the TV to IR Emitter module(see the Current Detection Wiring);
- Fill in the ON/OFF codes UV switch number in 'Set control target' window;
- Turn on the TV by remoter, and click 'Read', it will shows a value (e.g. 26);
- Turn off the TV by remoter, and click 'Read', it will shows a value(e.g. 4);
- Fill in the average value $(26+4)/2=15$ in the Standby current.

Standby current: 255 15 Power key:

Load status: OFF

Current detection

Working current value: 026 Read

Current value when OFF: 04 Read

Average value: 015

- If you want to turn ON TV, send command 'UV switch number 1, ON' to IR Emitter module;
- If you want to turn OFF TV, send command 'UV switch number 1, OFF' to IR Emitter module.

Application 1

Use a button of DLP to trigger HDL-MIRC04.40 to send IR code:

The screenshot shows the HDL software interface with a 'Targets Configuration' dialog box open. The main window displays a table of buttons and their targets. The 'Targets Configuration' dialog box has a 'Read' button highlighted, and a red box around the target table in the dialog with an arrow pointing to it.

Buttons Table:

Button ID	Name	Mode
1		Single ON
2		Single ON/OFF
3		Single ON/OFF
4		Single ON/OFF
5		Single ON/OFF
6		Single ON/OFF
7		Single ON/OFF
8		Single ON/OFF

Targets Table (Main Window):

Index	Subnet ID	Device ID	Type	Param1	Param2	Param3	Param4
1	10	1	Universal Switch	1(Switch no.)	ON(Switch St...	N/A	N/A

Targets Configuration Dialog Box:

Basic Information
Subnet ID: 10

Current selected page: Page-1
Current selected button: 1
Button type: Single ON
Button name:

Targets
Input target number:(1-1) From 1 To 1

Buttons: Read, Save, Targets create

Target Table (Dialog Box):

Index	Subnet ID	Device ID	Type	Param1	Param2	Param3	Param4
1	10	1	Universal Switch	1(Switch no.)	ON(Switch Status)	N/A	N/A

Application 2

Use DLP AC page to control AC via IR codes(learned from IR learner).

1. Upload the AC IR codes to SB-IR-EM;

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 Basic information | IR codes | IR learner | Universal switch setting | Sequence | Current detection

Input key number(1-180)
 From To

Key	Name	Valid	Delete
1	Test-ON	Valid	Delete
2	Test-OFF	Valid	Delete
3	Test-H-C-20	Valid	Delete
4	Test-H-C-21	Valid	Delete
5	Test-H-C-22	Valid	Delete
6		Invalid	Delete
7		Invalid	Delete
8		Invalid	Delete
9		Invalid	Delete
10		Invalid	Delete
11		Invalid	Delete
12		Invalid	Delete
13		Invalid	Delete
14		Invalid	Delete
15		Invalid	Delete
16		Invalid	Delete
17		Invalid	Delete
18		Invalid	Delete
19		Invalid	Delete
20		Invalid	Delete
21		Invalid	Delete

Test
 ON
 OFF
 H-C-20
 H-C-21
 H-C-22
 test1
 ABC
 ilife test
 qundatest
 112
 SHERWOOD RX-4109
 PROJETOR DLP
 TANDEBERG - TRC 4
 TV SONY
 NET ANTIGA
 TV SAMSUNG
 DVD SONY-DVP-SR200P
 RX PIONEER VSX-516
 DVD - SAMSUNG C450KS
 PROJETOR INFORCUS
 NET HD
 ONKYO - RX SR508
 BLURAY SAMSUNG

1. Select the IR codes which you want to use.

2. Start to upload to this module

Current selected key: 1 Channel:

Initial all key

Cooling, High fan speed, 20 °C to 22°C

Application 2

Use DLP AC page to control AC via IR codes.

2. Set the targets in DLP.(e.g. cooling, high fan speed, 20°C to 21°C)

1. Enable IR function and click IR codes button

2. Select the mode and fan speed

3. Set the targets for different temperatures

Index	Subnet ID	Device ID	Type	Param1	Param2	Param3	Param4
Cool: High-18C	255	255	Invalid	N/A	N/A	N/A	N/A
Cool: High-19C	255	255	Invalid	N/A	N/A	N/A	N/A
Cool: High-20C	10	1	Universal Switch	3(Switch no.)	ON(Switch Status)	N/A	N/A
Cool: High-21C	10	1	Universal Switch	4(Switch no.)	ON(Switch Status)	N/A	N/A
Cool: High-22C	10	1	Universal Switch	5(Switch no.)	ON(Switch Status)	N/A	N/A
Cool: High-23C	255	255	Invalid	N/A	N/A	N/A	N/A
Cool: High-24C	255	255	Invalid	N/A	N/A	N/A	N/A

Application 3

Use DLP AC page to control AC via IR codes(Built-in IR code).

1. Select the IR code ;

Index	Device	Name	Test
1	AC	DAIKIN-AC--001	Send
2	Fan		Send
3	AC	DAIKIN-AC--002	
4	N/A		
1	TV	ALDISPLAY-TV--001	
2	Projector		Send
3	Projector		Send
4	Projector		Send
5	Projector		Send
6	Projector		Send
7	Projector		Send
8	TV	ALDE-TV--001	Send
9	N/A		Send
10	N/A		Send
11	N/A		Send
12	N/A		Send
13	N/A		Send
14	N/A		Send
15	N/A		Send
16	N/A		Send
17	N/A		Send
18	N/A		Send
19	N/A		Send
20	N/A		Send

Please select remote type

Projector Fan Set top box
VCD TV AC

2)Model 3)Test match 4)Save

(2)Current model list

DAIKIN AC--001 AC--002 AC--005

Current Brand:DAIKIN Test and control

<< Save >>

Auto Test: Auto Interval: 1 (S) Start Auto

Choose group: AC Hint:

Save & Close

Application 3

2. Set from the DLP AC page;

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Settings 1 to 4 Pages AC Floor heating Music LED color & shortcuts LED white balance adjust Sleep mode

Basic information of AC

Enable Status when power on: Last status

Subnet ID: 10 Device ID: 1

HVAC No.: 1

Type: Version 2(support HVAC no.)

Adjust: 0

Other function setting

Setup Control AC running

IR codes Enable/disable IR

Slave & sync Send IR code when power ON

IR automatic control

Test

ON/OFF ON

Fan speed: Auto

Mode: Cooling

Cooling: 15C

Heating: 15C

Auto: 15C

Dry: 15C

Now: 28C Auto,Auto,

unlock Swing

Device: 10-9\

Save & Close

Fill in the subnet ID and device ID of the IR emitter, select version 2, AC number and save. After that, we can control the AC with built-in IR code.

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