ICP DAS

IR-210/712A + TouchPAD

Use Touch HMI Device to Control Infrared Appliances

Content

Introduction

Using Infrared remote controls for electrical appliances is very common in everyday life, such as TV, air conditioner, stereo, etc., but often users may feel a bit of trouble with a large number of remote controls. With the popularity of smart phones, we can see that people are gradually changing their controlling way toward touch-screen controlling. How to use a touch-screen controller to integrate all of the infrared remote controls? This document will detail the steps for users to quickly understand how to combine the IR-210/IR-712A (IR learning module) and TouchPAD (touch screen HMI device) in order to realize the same functions as a large number of infrared remote controls and each remote control can work as usual at the same time. The following sections introduce the IR-210 software installation which sets the IR Commands, and then introduce how to use HMIWorks to develop a TouchPAD project. Both introductions include detail steps along with screen shots to make it easier to learn.
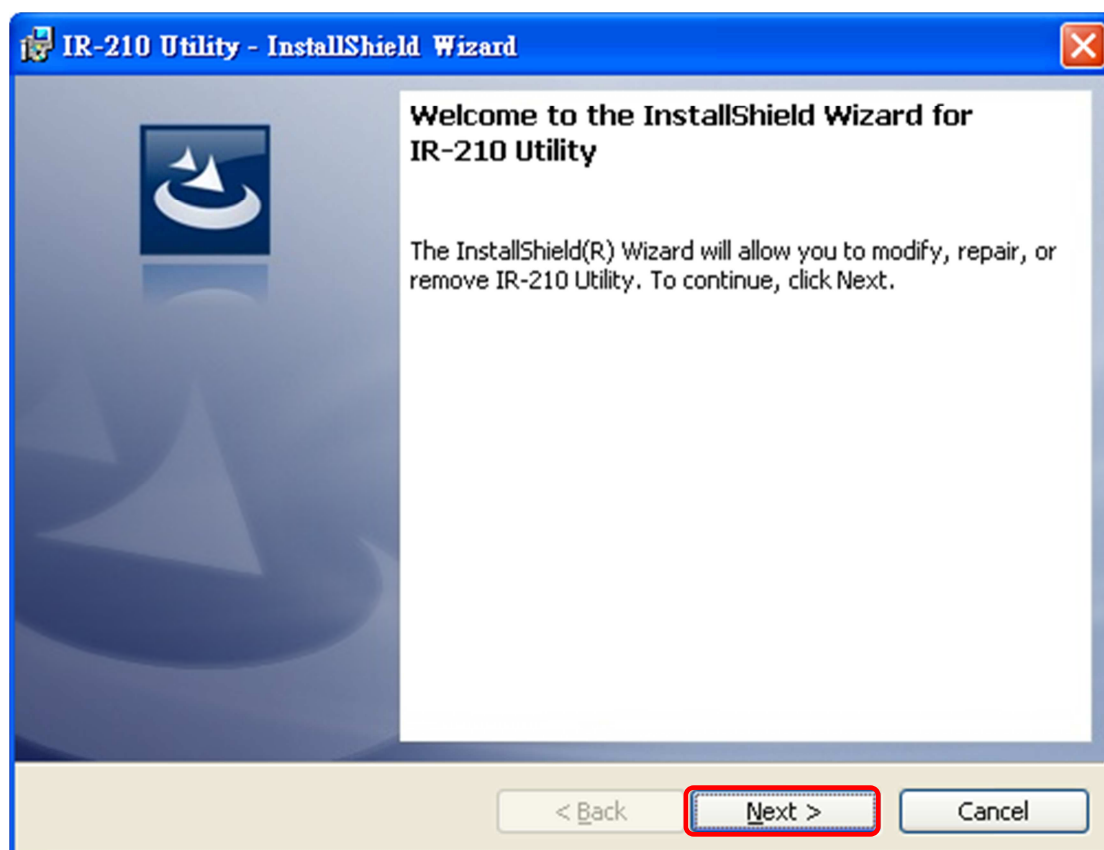
Chapter 1 Install IR-210/IR-712A Software

1.1 Install IR-210 Utility

Step 1: Double Click the IR-210 installation file。
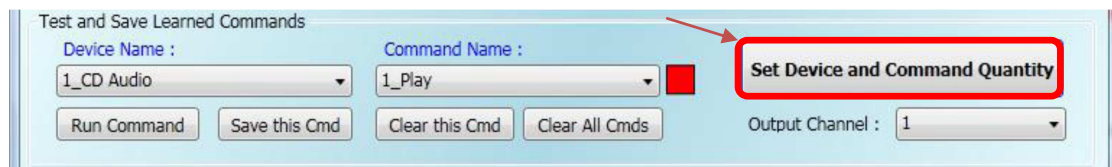

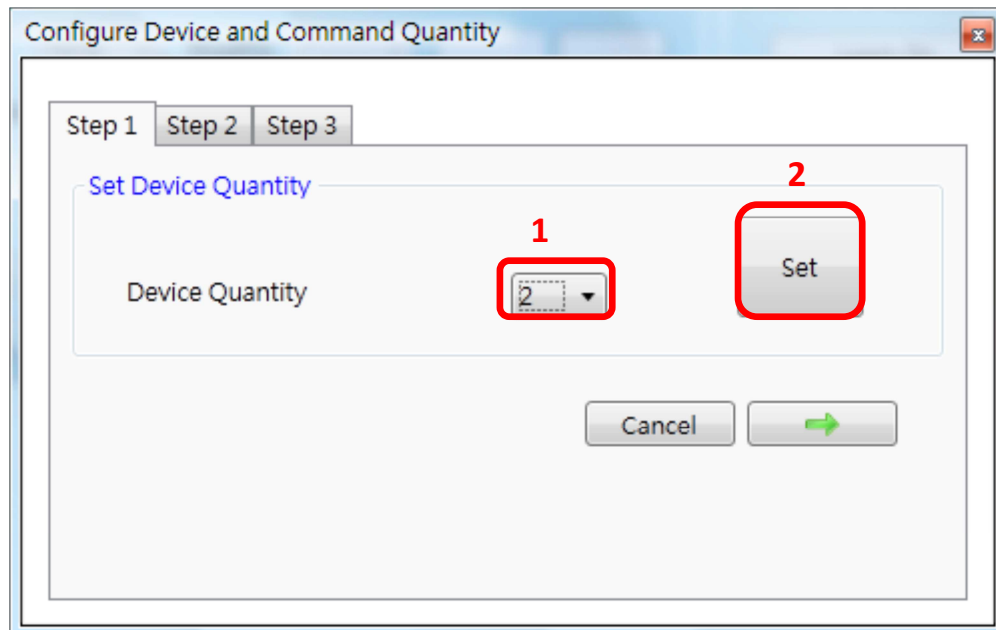**Step 2:** Follow the steps to install.

Chapter 2 Learn IR Commands

2.1 Set the number of devices and its commands

Step 1: Click on the button, "Set Device and Command to invoke Quantity", and shows the setting window.

Step 2: Set the device quantity.

Step 3: Set the device name and the quantity of its IR commands.

Step 4: Set the command name in order to understand its function easily. Each command has a prefix number which is stored in IR-210/IR-712A as the index of the command.

2.2 Learn and test the IR commands

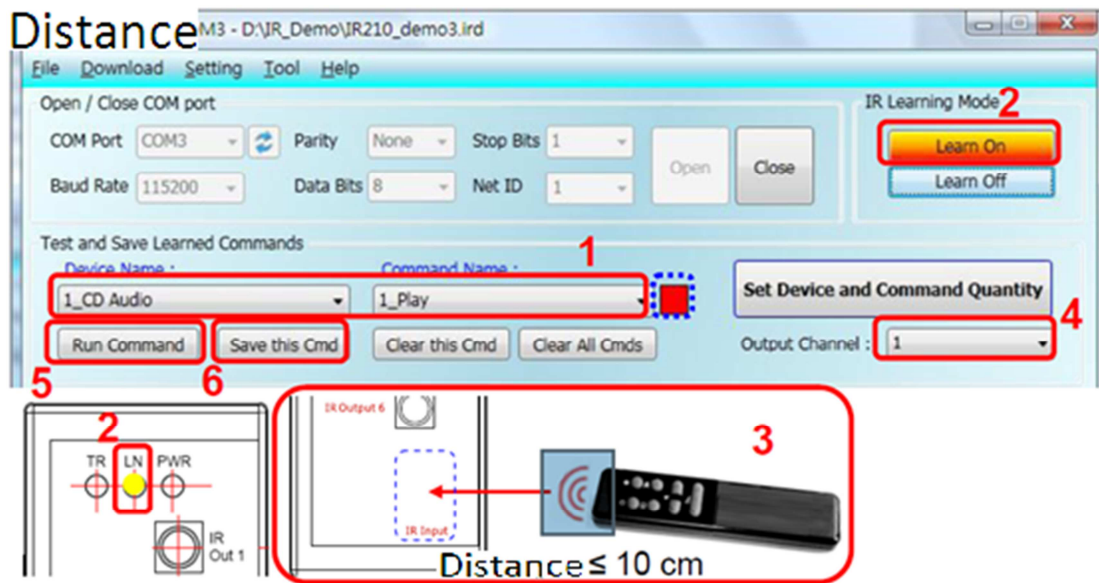**Step 1:** select Device Name and Command Name to learn.

Step 2: Click on the button "Learn On". While LN (LED indicator) is turned on, IR-210/IR-712A enters the learning status.

Step 3: make the emitting point of the remote control aimed at "IR input" zone on the top of the IR-210/IR-712A and press the button of the remote control. Be sure to make the emitting point in the range of 10 cm from the IR-210/IR-712A. After learning, the LN indicator of the IR-210/IR-712A turns off.

Step 4: select the output channel of this IR command. As the below figure shows, we select channel one for example.

Step 5: Output this IR command from the IR-210/IR-712A to test the newly-learnt command. Put the IR emitting point on a vertex of the cable which is connected to the channel one of the IR-210/IR-712A to the appliance being controlled and then click on the button of "Run Command" to see whether the channel one of IR-210/IR-712A can control the appliance. If not, repeat the Step 2 and 3 to learn again.

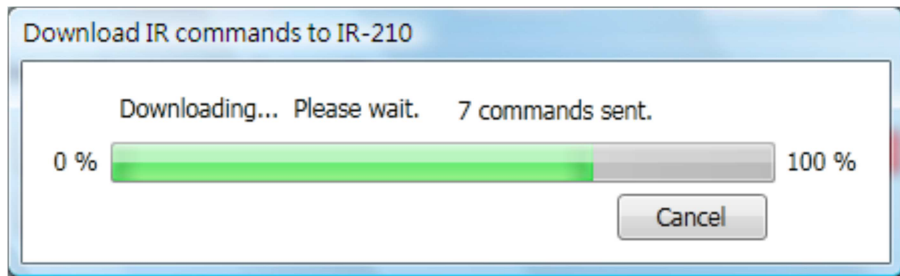**Step 6:** Click the "Save this Cmd" button to save into the file.

2.3 Save the learned IR Command

2.3.1 Save the command into a file

Click the menu of the Utility, [File]->[Save commands to file]. In the open file dialog, save the file with extension ".ird". Distance

2.3.2 Save the command into the IR-210

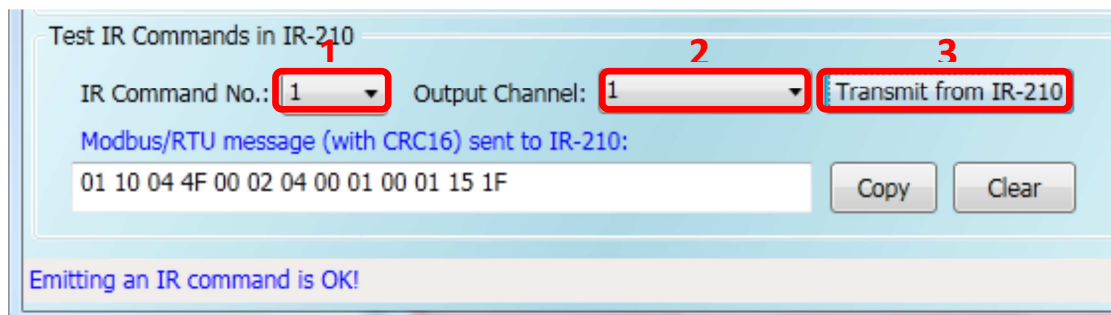Click the menu of the Utility, [File]->[Download IR commands to IR-210], and then shows a download window.

Download IR commands to IR-210

Downloading... Please wait.   7 commands sent.

0 %   100 %

Cancel

2.3.3 Test the learned command which is stored in IR-210

Step 1: choose the index of the IR command.

Step 2: select the output channel and click on the button, "Transmit from IR-210".

Step 3: After clicking the button mentioned above, there are Modbus message (command) in the text field which is used to control IR-210/IR-712A to output infrared signal. These Modbus message can be used by TouchPAD to control the

Test IR Commands in IR-210

1   **2**   **3**

IR Command No.: 1   Output Channel: 1   Transmit from IR-210

Modbus/RTU message (with CRC16) sent to IR-210:

01 10 04 4F 00 02 04 00 01 00 01 15 1F   Copy   Clear

Emitting an IR command is OK!
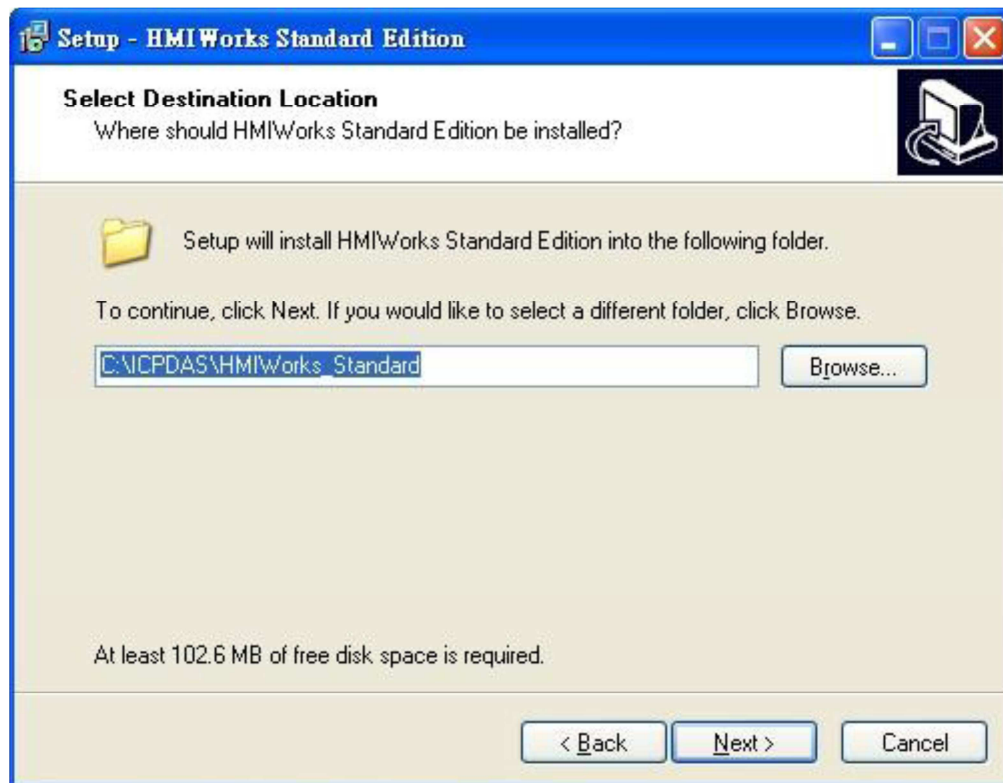
Chapter3 Develop a Application to Control

IR-210 by HMIWorks

HMIWorks is the development software for TouchPAD.

3.1 Install HMIWorks Standard
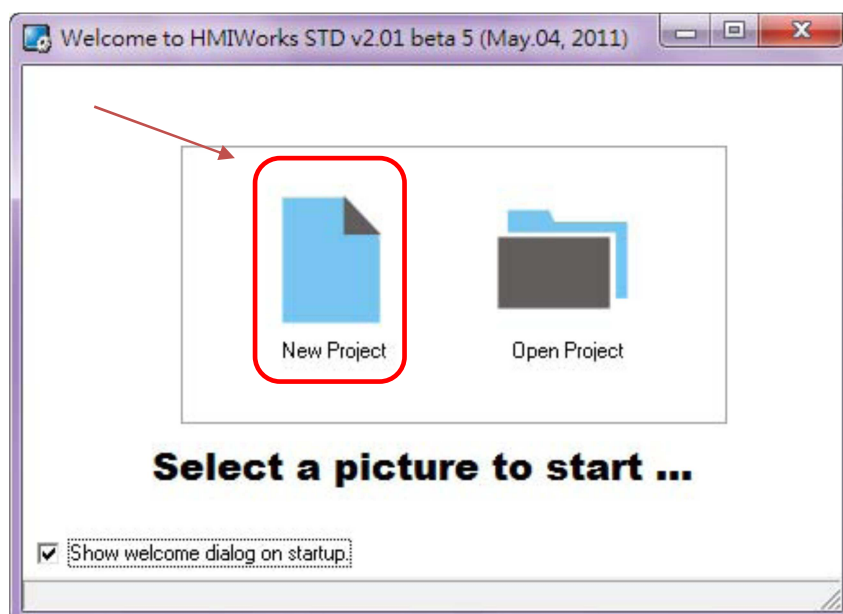
Step 1: Double click the installation file.

HMIWorks_...

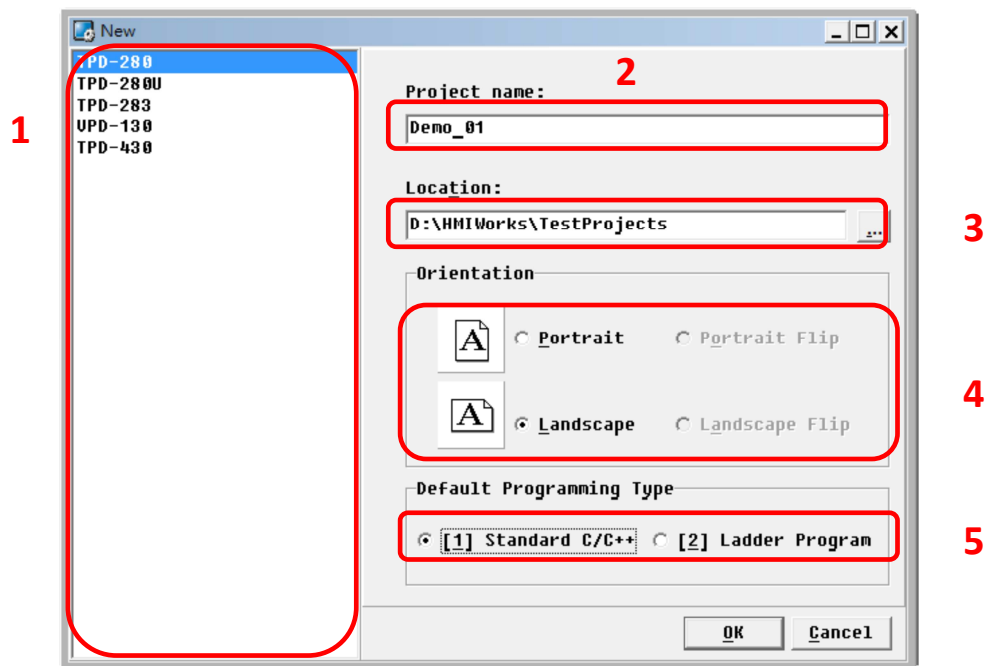**Step 2:** Follow the steps to install.

3.2 Create a new HMIWorks project

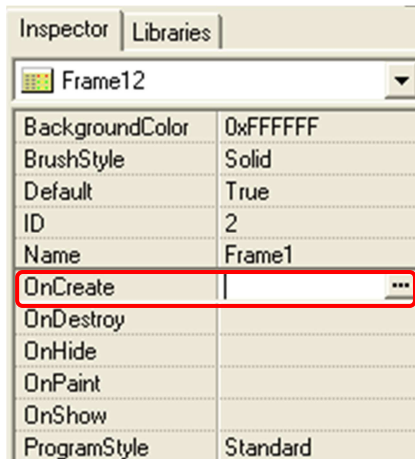**Step 1:** Click the "New Project" to create a new project.

Step 2: Select the model name for the target device. Fill out the

fields, such as project name, location, etc. and then select

"Standard C" as the default programming type.

3.3 Project Development

Step 1: Double click on the OnCreate property of a frame to write
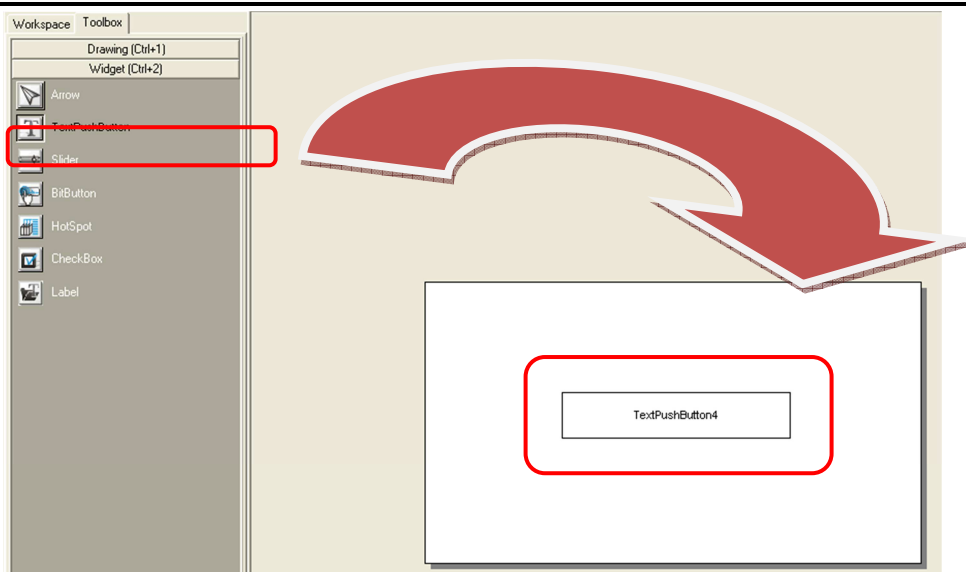
programming code.

```
HANDLE IR210;

void Frame12OnCreate()
{
    HANDLE UART = uart_Open("COM0,9600,N,8,1"); //open com port

    IR210 = UART;//set the handle to use
}
```

Step 5: Refer to step of 2.3.3, copy the Modbus command

(message) on the IR-210 Utility. Copy the command and put it in

the OnClick event handler of the TextPushButton and use

Uart_BinSend() to send it to the IR-210/IR-712A.

```
void TextPushButton69OnClick(tWidget *pWidget)
{
    unsigned char str[] = {0x01, 0x10, 0x04, 0x4F, 0x00, 0x02, 0x04, 0x00, 0x01, 0x00, 0x01, 0x15, 0x1F};

    uart_BinSend(IR210, str, sizeof(str));
}
```

Step 6: Download the program to the TouchPAD. Finally, users

can use TouchPAD through the IR-210/IR-712A to control