

## Application

The DIR-TX8 is designed to provide cost effective integration and control of all types of infrared controllable devices, such as AV equipment. TPanel is used to commission the DIR-TX8 and can use common IR codes from freely available .pcf library files. The DIR-TX8 also has an integral IR receiver that is used to learn and save previously unknown IR codes.

Multiple IR codes can be arranged into macros and played back at any time with a single DyNet command. The device includes an internal Programmable Logic Controller and supports all Dynamalite script commands.

## Configuration

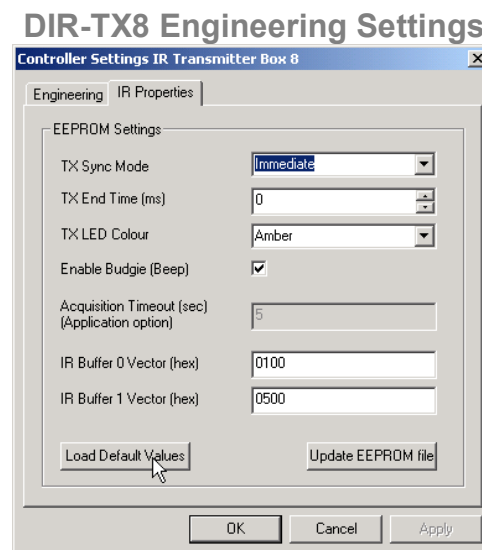
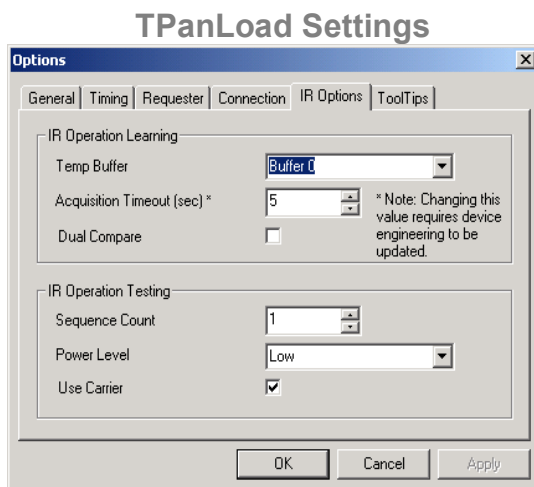
### Initial set up

Power up the DIR-TX8 and connect it to the PC via a PC node (Serial or USB). Open TPanel build41 or greater and select File> New> IR Transmitter. When the 'Search-List devices' page appears, press the reset button on the DIR-TX8 and the box number on the page will change to the box number of the device (Last 2 digits of the serial number by default).

Once the device has been created in a TPanel project the configuration process can proceed.

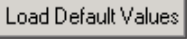
### TPanel Settings and Factory Default

1. In the dropdown menu select Tools>TPanel options
2. Click on the IR Options tab and configure the settings as shown below
3. Choose Dual Compare if you are having trouble learning IR codes (see Learn IR Codes for more details)



## Configuration (continued)

### Setting the DIR-TX8 Engineering Defaults

1. Right click on the EEPROM icon in the Project Tree and select Read from Device.
2. Right click on the IR Transmitter in the Project Tree and select Engineering.
3. Select the IR Properties tab and click on  to reset factory settings as shown on the previous page.
4. Click Load Default Values, then click Update EEPROM file, then click OK to return to the main screen.
5. Right click on the EEPROM icon in the Project Tree and select Save to Device.

### Factory Resetting a DIR-TX8

If the DIR-TX8 needs factory defaulting this should be done in TPanLoad using the following procedure.

1. Right click on the IR Transmitter in the Project Tree and click on Format Flash
2. Reset Engineering defaults as described in the previous section


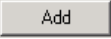
## Learning IR Codes

To learn IR codes into the device from a normal remote control follow the procedure below:

### To Create a Model

1. Left click on 'Models' to select the models file.
2. Right click in the dark grey area on the right of the page and select 'Add Row'.
3. Enter a model name and description for the device that the remote control belongs to.
4. Click on the Yes/No Tag in the 'In Use' column to set it to 'Yes'.

### To Learn an IR Code

1. Left click on the + box in the Project Tree to the left of the Models file to expand the file tree.
2. Right click on the relevant Model in the Project Tree and select 'Learn IR codes'.
3. Fill in the operation name field with a description of the operation for the code you are learning.
4. Click on  to activate the IR learning.
5. Point the remote control at the 'Learn TX' LED on the front of the DIR-TX8 and press the relevant button for 1 second. **Note:** If dual compare is switched on, two presses with a 1 second delay between button presses is required to learn the code
6. If the code is learned correctly the dialog will display the status: Learned OK.
7. If an error message appears repeat the above steps.
8. Once the code has been learned click  to add the command to the list for that model.
9. Repeat the above steps until all the required codes have been learned.

## Importing Existing IR .ccf Files

IR codes can be sourced from the Internet (e.g. [www.remotecentral.com](http://www.remotecentral.com)) and used as library files to quickly import numerous IR codes into the DIR-TX8.

### To Import .ccf files:

1. Download the .ccf file from the Internet if necessary and save it to a library folder.
2. In TPanel, right click on the IR Transmitter device in the Project Tree and select 'Import File'.
3. Set the File of Type option to 'IR codes'
4. Select the file that you want to import and click on 'Open'
5. The file will be added to the models library in the project

## Adding Components

A component is an instance of a model. E.g. If a customer has 3 DVD players that are all the same model, only one model needs to be created and each DVD player becomes a separate component.

### To Add a Component

1. Left Click on the Components file in the Project Tree.
2. Right click in the dark grey area on the right of the page and select 'Add Row'.
3. Name the new component and then select the relevant model from the dropdown list.
4. Select the output IR emitter port that the component will be connected to.
5. Set the IR output strength to Low, High or Super High (see table below).
6. Set Carrier to 'Yes' for transmitting IR from an emitter. Set to 'No' if using a direct link to the receiving device.
7. Right click on the default.dds file in the Project Tree and select 'Save to device'.

#### Output Strength Setting

<b>Low:</b>	2 models in the same vicinity to prevent cross talk interference.
<b>High:</b>	Normal operation.
<b>Super High:</b>	Emitter not fitted directly onto IR receiver for the device.

## Installation

### Identifying Outputs A and B

To identify which emitter is channel A and which is channel B a DyNet string needs to be sent to the DIR-TX8 either via a panel on the network or from the DLight Sequencer. The string is as follows:

```
Dynet (0x5C, 0xAC, [Box Number], 0x01, 0x33, 0x03, 0x00)
```

**Box number:** The box number of the DIR-TX8 that is being configured.

1. Send the IR set up string from DLight.
2. Hold the emitter close to the Learn TX LED on the DIR-TX8.
3. Look for the long red flash and listen for the long beep to identify the B channel emitter.

**Note:** The setup mode will timeout after 30 seconds of inactivity and will indicate the timeout with a beep and a reset message in DLight.

#### Example of the different identification patterns:

Port 3 channel A = 3 short green flashes with accompanying beeps.

Port 3 channel B = 3 short green flashes followed by a long red flash with accompanying beeps.

## Operation


Once the device is programmed it should be installed close to the devices it is to control. It can use up to 4 tandem IR emitters allowing 8 different devices to be controlled from one DIR-TX8. The IR codes can be triggered via a 5c physical message from another device on the network, or alternatively using a start command inside the DIR-TX8 task engine.

## Testing IR Codes from TPanLoad

There are two stages in the DIR-TX8 commissioning process when TPanLoad can be used to test the IR codes.

### Test after Learning


The code can be tested before it is saved to device

1. Left click on the + box in the Project Tree to the left of the models file to expand the file tree.
2. Right click on the relevant device in the models section of the Project Tree.
3. Select Play IR Codes.
4. Select the device and enter the operation number you want to test (number in left hand column).
5. Left Click on  and the string will be sent to the DIR-TX8 which will then transmit the IR string from the assigned output emitter

## Testing IR Codes from TpanLoad (continued)

### Test after saving the default.dds to the DIR-TX8

The code can be tested once it has been loaded into the DIR-TX8

1. Left click on the + box in the Project Tree to the left of the models file to expand the file tree.
2. Right click on the relevant device in the models section of the Project Tree.
3. Select Test IR Model Operation.
4. Select desired operation to test.
5. Left click on  to test.
6. The DIR-TX8 will transmit its stored IR string from the assigned output emitter.

## Triggering Strings

The IR signals can be triggered via a 5C message to the DIR-TX8 or from the internal task engine within the device.

### Using a physical IR transmit message

The command is structured as follow:

```
Dynet (0x5c, 0xAC, [Box_Number], 0xC0, [Component_no.], [Operation_no.], [repeat])
```

**Component\_no.:** The Line number given in the left hand column on the component page in TpanLoad to identify a device. To view this page click on the components file in the Project Tree.

**Operation\_no.:** The line number given in the left hand column of the specific devices page in models to identify the required operation from the component. To view this page click on the specific model in the Project Tree.

**Repeat:** The number of times you want the IR string to be transmitted. I.e. if it is for a volume up command you may want each up to be 5 increments if they are only small.

### Using a command within a DIR-TX8 evt file

The script command, SendIR, can be used in a task to trigger IR transmissions from the DIR-TX8. The format is as follows:

```
SendIR([component_no.], [operation_no.], [repeat])
```

E.g.

```
Task1 ()
{
    Name="Movie Scene"
    SendIR(2,1,1)           // Send Play message to Sony DVD Player
    SendIR(3,2,1)           // Send On message to Plasma TV
    Preset (A=6,P=3,F=5)     // set home cinema to movie scene
    Delay(1)
    Preset (A=16,P=4)        // Close curtains in home cinema
}
```