

**NOTE:** These instructions as written refer to version 1.2.15.0 of the .net IRTrans Plug-in and to HomeSeer version 2.2 and later.

## Introduction:

The .net IRTrans Plug-in was specifically designed as a managed .net assembly for HomeSeer 2 and was developed in CSharp and targeted for the 2.0 framework. It allows HomeSeer 2 to work with the IRTrans IR transmitter/receiver devices as a native IR interface.

## **Key Features:**

- Provides native support for the IRTrans devices
- Supports multiple IRTrans units on multiple buses and zoned IR transmission
- Supports sending to individual IR emitters on LAN Controllers and other IRTrans units that support multiple emitters.
- Monitors IRTrans Server connection and automatically re-connects if necessary
- Supports detailed logging for debugging
- Allows learning from any IRTrans device on the bus
- Confirmation of Learn success/failure
- Supports a maximum of 1,000 individual IR codes.

## Installation:

- If you have not already done so, install the IRTrans software that was included with your unit. You may wish to check the IRTrans web site to ensure that you have the most current version installed. Follow the instructions in the *IRTrans Users Manual*. Please ignore the portion of the manual that discusses IRTrans and HomeSeer as it is primarily referring to the 1.x version of HomeSeer.
- 2. The IRTrans Server software must be running in order for the plug-in to function correctly, so you may wish to add it to your Startup Group or choose the option during installation to install it as a service to have the server software run on startup even if no user is logged on. This can be especially helpful if you are running HomeSeer 2 as a service.
- 3. Test your installation of the IRTrans software by using the GUI Client to ensure everything is working properly. There is no point in proceeding further until everything checks out.
- 4. Install HomeSeer 2 if you have not already done so. Start up HomeSeer 2 and ensure the installation is working properly.
- 5. Download and install the IrTrans Plug-in through the HomeSeer Updater.

Upon installation, the following files should be installed to the HomeSeer 2 program folder which is usually C:\Program Files\HomeSeer 2.

FILE	DESCRIPTION
hspi_irtrans.dll	The HomeSeer 2 IRTrans plug-in
IRTrans.NET.dll	IRTrans Server library. The plug-in uses
	this library to communicate with the
	IRTrans Server software.
\Docs\IRTransGuide.pdf	This document.



6. Start or restart HomeSeer 2. It will automatically detect the IRTrans plug-in and you should see something similar in the log as shown below:

2007 11:12:54 AM	Info	FOULD plug-IN: ADIOCEIOL, Version: 1.14.0.3
7 11:12:55 AM	Info	Found plug-in: X10 CM11A/CM12U, version: 1.0.2.0
007 11:12:55 AM	Info	Found plug-in: HAI RC Thermostat, version: 1.0.16.0
11:12:55 AM	Info	Found plug-in: IM Connector, version: 0.57.2237.42
, 2007 11:12:55 AM	Info	Found plug-in: IRTrans, version: 1.1.13.0
' '2007 11:12:55 AM	Info	Found plug-in: LEDAM, version: 0.6.0.0
	No. of Concession, Name	C southome Port in MCP we size

HomeSeer Log Snippet Following Installation

7. Now that the plug-in has been installed, you need to tell HomeSeer to enable it. Open HomeSeer up in a web browser and click on the **Setup** button. Then click on the **Interfaces** tab. The IRTrans plug-in should be listed along with your other plug-ins similar to the image below:

🕙 Setup - Microsoft Internet Explo	rer							
File Edit View Favorites Tools	Help							
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Address 🕘 http://ha2/conf							💌 🄁 Go	Links 🎽 📆 🗸
Setup								
Z-Wave Interface								
None 🔽								Ξ.
Plug-In Interfaces								
Interface (Plug-In) Name	X 10	Infrared	Other	COM Port	File Name	Version	Current License Mode	Plug-In Status
	(Cli	ck to Chan	ge)				(Click to Change)	
AC RF Processor			Enabled	N/A	hspi_ACRF.ocx	1.1.0.11	🗹 Registered	Interface OK
ADIOcelot	Enabled	Disabled	Enabled	5	hspi_ADIOcelot.exe	1.14.0.3	🗹 Included	Interface OK
HAI RC Thermostat HAI RC Thermostat			Enabled	N/A	hspi_haithermostat.dll	1.0.16.0	🗹 Included	Interface OK
IM Connector			Disabled	N/A	hspi_im.dll	0.57.2237.42688	🗹 Included	
IRTrans		Disabled		N/A	hspi_irtrans.dll	1.1.13.0	🗹 Included	
LEDAM		N	Enabled	N/A	hspi_ledam.exe	0.6.0.0	Included	Interface OK
SmartHome PowerLinc USB	Disabled			N/A	hspi_powerlincusb.exe	1.0.0.7	🗹 Included	
X10 CM11A/CM12U	Disabled			N/A	HSPI_CM11A.dll	1.0.2.0	🗹 Included	
Install More Interfaces								
Save								×
ど Done							🧐 Li	ocal intranet

Enabling the IRTrans Plug-in



8. Click on the **Disabled** button in the same row as the IRTrans plug-in name to change the status to Enabled. Click on the **Save** button to apply your changes and enable the plug-in.

Note: You can safely ignore the COM port column as the IRTrans plug-in does not use a COM port.

9. Once the plug-in has been changed to Enabled and saved, the following screen will appear. If the IRTrans server software is running on the same PC as HomeSeer, and you do not have multiple IRTrans units (zoned IR), then no additional configuration is needed.

🖉 Setup - Microsoft Internet Explo	rer							
File Edit View Favorites Tools	Help							<b></b>
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Address 🕘 http://ha2/conf							💌 🄁 Go	Links » 👰 🔹
Setup 4/4/2007 12:23:07 PM S Status Events Log Log Out HAI RC Thermostat General Location E-m Euilt-In Interfaces Z-Wave Interface None	Control	D AM ) S TV Timer	Sunset: r Set WebUser	7:31 Pl tup	M User: default Threads Phone 1 /eb Site Device Types	IR Signals VRen	<b>Or Home</b> ver Failure Phone	omeSeer Help
Plug-In Interfaces				COM			Current License	Plug-Ip
Interface (Plug-In) Name	X10 I	infrared C	Other	Port	File Name	Version	Mode	Status
	(Click	to Change)	) nabled i				(Click to Change)	Tota da an OK
AC RF Processor			nableu r	N/ A	Inspi_ACKF.00X	1.1.0.11	V Registereu	Interface OK
ADIOcelot	Enabled	Disabled Er	nabled	5	hspi_ADIOcelot.exe	1.14.0.3	M Included	Interface OK
HAI RC Thermostat HAI RC Thermostat		Er	nabled	N/A	hsni, baithermostat.dll	1.0.16.0	🗹 Included	Interface OK
IM Connector		Di	isabled r	N/A	Setting	0.57.2237.42688	🗹 Included	
IRTrans	E	Enabled Config	ſ	1	hspi_irtrans.dll	1.1.13.0	🗹 Included	Interface OK
LEDAM		S Er	nabled	N/A	hspi_ledam.exe	0.6.0.0	🗹 Included	Interface OK
SmartHome PowerLinc USB	Disabled		r	N/A	hspi_powerlincusb.exe	1.0.0.7	🗹 Included	
X10 CM11A/CM12U	Disabled		r	N/A	HSPI_CM11A.dll	1.0.2.0	🗹 Included	
Install More Interfaces								
Save								
				_				cannuranec 🦼



9. You can access the plug-in's configuration page by clicking on the **Config** button. A window similar to the following will appear:



The IRTrans Configuration Web Page

All of the options on this page are also documented there, but the "IR Learning Bus" drop list deserves special note. Although your installation can consist of devices on multiple buses,



(typical if Ethernet modules are involved), the plug-in must designate which bus IR signals will be learned from at any given moment. You can change this as often as you want, especially if you need to learn commands in different rooms. Once configuration is complete, you should restart HomeSeer so that the menu options can be updated if you've changed the "Use Zones" option.

## Learning IR Signals:

You can access the *Infrared Signal Configuration* web page in two different ways. The first is to click on **Edit | Infrared Signals...** as shown below:

🐔 HomeSeer - C:\Program Fi	les\HomeSeer 2\d	onfig\sample.mdb
File Edit View Service Help		
EVE Infrared Signals		
D, Setup.	/pe	Message 🔨
3/; Licenses	artup	IR Label file (config\irlbl.cfg) missing or corrupt, creating new file
3/. Scripts	ifo	Done initializing infrared interface IRTrans
3/ Minimize to System Tray	Trans	Connection to localhost was successful.
3/] Start Minimized	ito	Local IP address is: 192.168.17.25 (subnet: 255.255.255.0)
3/24/2006 2:42:04 DM	uro ofo	Web Server remote access is disabled. It can only be accessed from this comp Web Server started on localbest, part 20
3/26/2006 3:43:04 PM II	ino itartun	Initializing text to speech
3/26/2006 3:43:04 PM II	nfo	Listening for remote speaker connections on port 8742
3/26/2006 3:43:04 PM S	tartup	Start remoting
3/26/2006 3:43:04 PM S	tartup	Start event processing
3/26/2006 3:43:04 PM I	nfo	This version of HomeSeer is not registered and is running as a trial, 29 days re
3/26/2006 3:43:04 PM S	tartup	Running startup script
3/26/2006 3:43:04 PM S	tartup	Scripting is OK
3/26/2006 3:43:04 PM I	nfo	Done with scripting
3/26/2006 3:43:04 PM S	tartup	Starting scheduler
3/26/2006 3:43:04 PM S	tartup	Start up complete. Web Company with mined level levin averaged discrete 197,0,0,1 there default
3/26/2006 3:43:05 PM II	nto nfo	Speaker diest coppected from: 127.0.0.1
3/26/2006 3:43:23 PM P	NEBLIG	Checking if this new bost was already connected new bost is: VS2005;DEFAU
3/26/2006 3:43:24 PM I	nfo	Sneaker host added. Name: vs2005 IP address: 192.168.17.25
3/26/2006 3:43:52 PM I	nfo	Shutting down X10 Plug-In: SmartHome PowerLinc USB
3/26/2006 3:43:53 PM I	nfo	Done initializing X10 interface
Idle		

The Edit Menu After IRTrans Plugin Installation

Alternatively, you can tell HomeSeer to add an Infrared Signals navigation link to the menu bar. See the HomeSeer online help for detailed instructions.



Either way, once accessed, you will be presented with a browser window similar to the following:

🗿 HomeSeer	Infrared Sigr	nal Config	uration - N	licrosof	t Internet	Explo	rer				
File Edit Vi	ew Favorites	Tools He	elp								2
🕒 Back 🔹		2 🏠	🔎 Searc	:h 숬	Favorites	$\Theta$	<b>@-</b> 🎍	28			
Address 🙆 htt	:p://localhost/irsg	)							~	> Go	Links »
an Zh		2/12									~
Home	Seer In	frare	d Sig	nal (	Confi	gura	ation				
	2006 3:47:49	PM 😑 Su	inrise: 3:3	8 AM [	) Sunset	: 4:03	PM <b>User:</b> d	efault 🛛 🕇	🛱 Ноп	eSee.	r
Status	Events	Log	Control	TV Tir	ner Se	etup	Updater	Help	Log Ou	it	
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Devic	e Name	Sig	nal Name		Signal Lo	cation	Device D	efault Outp	ut Zone	Functio	n
(New Devi	ce)	(New Ke	у)		0	~		(Default)		Add	
- 11/4	<u></u>										
Zone Nai	me or Device	e Name	Outpu	t Zone							
UDEFAULT	)		1 💌	Delete							
(New Zone	Name)		1 🗸	Add							
Save	1										
											~
🞒 Done									🧐 Local ir	itranet	

The Infrared Signal Configuration Web Page

The **Device Name** would generally be the name of the TV, DVD, A/V Receiver, etc. that you are learning commands for. It is important to type the Device Name in exactly the same each time for each signal you are learning. We recommend that you keep the name relatively short and use no spaces within the name, such as SonyTV, or Tivol.

The **Signal Name** is the button on the remote you are learning. Again, avoid spaces and keep the names as short as possible. Some examples are Pwr, Ch+, Ch-, etc.

Each IR Signal learned is assigned to a **Signal Location** starting with zero. No two signals should have the same location and it is up to you to specify which location should be used to hold the learned signal. We recommend that you start at zero and work your way up.

The **Device Default Output Zone** is where the IR signal should be sent, unless another zone is specifically requested. This really only applies to zoned setups and it allows you to specify which IRTrans unit will normally send a given IR signal if no specific zone is specified. See the **Specifying IRTrans Units/Zones** section for additional information.



To learn a signal, type in a device name and signal name. Choose a signal location from the drop list and click on the Add button. Repeat this process for each signal you expect to learn. After a few, you should have a web page that looks similar to the following:

🕘 HomeSeer	HomeSeer Infrared Signal Configuration - Microsoft Internet Explorer										
File Edit V	'iew Favorites	То	ols He	elp							<b>R</b>
G Back 🝷	🔊 - 🖹	2	6	🔎 Searc	h ☆ Fa	avorites 🧭	Ø• 🍓 🗖	- 28			
Address ど ht	tp://localhost/irs:	g							✓ →	Go Lin	ks »
Sr 12			2/								^
Home	Seer II	nτr	are	a Sigi		ontigu	ration			-C	
<b>V</b> 3/26/	2006 4:18:37	PM	💛 Su	inrise: 3:38	вам 🎐	Sunset: 4:0	3 PM User: defa	ault 🎗	сноте	Seer	
Status	Events	LO	g	Control		er setup	updater	нер	Log Uut		
Select Infra	ared Device:	~		levices 🗸							1
Dev	vice Name	× · ·		Signal Nar	me	Signal Location	Device Default Output Zone		Function		
SonyTV		Θ	Pwr			0	SonyTV	Learn	Send	Delete	
SonyTV		Θ	Ch+			1	SonyTV	Learn	Send	Delete	
SonyTV		Θ	Ch-			2	SonyTV	Learn	Send	Delete	
SonyTV		Θ	Vol+			3	SonyTV	Learn	Send	Delete	
SonyTV		Θ	Vol-			4	SonyTV	Learn	Send	Delete	
(New Dev	ice)		(New	/ Key)		5 💌	(Default)		Add		
Zone Na	me or Nevic	e Na	me	Outout	t Zone						
(DEFAUL	Г)			1 🗸	Delete	-					
SONYTV				1 🗸	Delete						
(New Zone	e Name)			1 🗸	Add	-					
Save									63		~
😂 Done									😼 Local intr	anet	

Click on the Save button at the bottom of the page to save your device/signal definitions. Now it's time to learn them one by one. Position the IRTrans unit within a few feet of the remote and in a direct path with the IR receiver. You may also wish to turn off any compact fluorescent lighting or anything else that could cause some interference with the learning process. If the LED on the top of the IRTrans unit is blinking green from time to time when nothing is happening with the system, it indicates that it is receiving stray IR from somewhere. To ensure the best accuracy during the learning process, you'll want to minimize this interference as much as possible.



Click on the green Learn button next to the first command you wish to learn and you'll be presented with a dialog similar to the following:



After a few seconds, the dialog will change to:

Continue Infrared Learning to Location 0 - Micr
Learning signal for location 0 is in progress
$\gamma \approx 100$
Star S
and the start

At this point, aim the remote at the IRTrans unit and hold down the button you are trying to learn. You'll have about 15 seconds to complete the job, before the learn request is automatically cancelled.

Learning is usually completed within a second or two with the following confirmation:

🗿 Done Infrared Learning to Location 0 - Microsof 🔳 🗖 🔀					
Learn operation for location 0 is complete.					
OK					
and and					

Move on to the next signal, repeating the process until all of the signals have been learned.

**NOTE:** When learning a series of IR signals for a given device, we suggest adding all of the signal definitions first, then saving the page by clicking on the green Save button at the bottom. Once saved, begin learning each signal one by one.

Keep in mind that you can learn IR signals from any IRTrans device on the bus. If you have a multi-zoned system, you can take your notebook PC into each zone and learn and test the commands right there using the IRTrans device in that zone.



# **Specifying IRTrans Buses and Units:**

You can have up to 16 IRTrans units on a single bus, and up to 16 buses, which means up to 256 different independent zones. Additionally, you can have multiple, individually addressable, external emitters attached to IRTrans units as well.

The first IRTrans device will be assigned bus zero, unit zero. If you're using an installation that supports the IRTRans 2/3 Wire Bus, you may also have additional units on that same bus. Since HomeSeer works with only a "zone" concept, the plug-in maps HomeSeer zones to IRTrans Buses/units/emitters as follows:

HomeSeer Zone	IRTrans	IRTrans Unit	
	Bus		
1-99	All Buses	All Units	Send using all units on all buses using LED settings configured on the units.
100	Bus 0	Unit 0 (The primary IRTrans unit)	Send using LED settings configured on unit 0
101	Bus 0	Unit 1	Send using LED settings configured on unit 1
102	Bus 0	Unit 2	Send using LED settings configured on unit 2
Sequence continues to 115	Bus 0	Sequence continues to Unit 15	Send using LED settings configured on unit
121	Bus 0	Unit 0	Send using internal LED only
122	Bus 0	Unit 0	Send using external LED only
123	Bus 0	Unit 0	Send using both internal and external LEDs
131	Bus 0	Unit 0	External LED 1 on LAN Controller
132	Bus 0	Unit 0	External LED 2 on LAN Controller
133	Bus 0	Unit 0	External LED 3 on LAN Controller
134	Bus 0	Unit 0	External LED 4 on LAN Controller
135	Bus 0	Unit 0	External LED 5 on LAN Controller
136	Bus 0	Unit 0	External LED 6 on LAN Controller
137	Bus 0	Unit 0	External LED 7 on LAN Controller
138	Bus 0	Unit 0	External LED 8 on LAN Controller
199	Bus 0	All Units	Send using all units on bus 0 using LED settings configured on the devices
200	Bus 1	Unit 0	Send using LED settings configured on unit 0
201	Bus 1	Unit 1	Send using LED settings configured on unit 1
202	Bus 1	Unit 2	Send using LED settings configured on unit 2
Sequence continues to 215	Bus 1	Sequence continues to Unit 15	Send using LED settings configured on unit



221	Bus 1	Unit 0	Send using internal LED only
222	Bus 1	Unit 0	Send using external LED only
223	Bus 1	Unit 0	Send using both internal and external LEDs
231	Bus 1	Unit 0	External LED 1 on LAN Controller
232	Bus 1	Unit 0	External LED 2 on LAN Controller
233	Bus 1	Unit 0	External LED 3 on LAN Controller
234	Bus 1	Unit 0	External LED 4 on LAN Controller
235	Bus 1	Unit 0	External LED 5 on LAN Controller
236	Bus 1	Unit 0	External LED 6 on LAN Controller
237	Bus 1	Unit 0	External LED 7 on LAN Controller
238	Bus 1	Unit 0	External LED 8 on LAN Controller
299	Bus 1	All Units	Send using all units on bus 1 using LED settings configured on the devices
Sequence continues to 1699	Bus 15		
1699	Bus 15		

Essentially, zones x21 - x23 allow you to select internal/external emitters typical on Ethernet units which support an external emitter. Zones x31 - x38 allow you select individual external emitters on the LAN Controller series of IRTrans units.

When a given IR signal is defined, it is associated with a default zone which is usually the same as the device name. If you do not specify a zone when sending IR signals via an event or script, HomeSeer will automatically select the zone that is associated with it on the Infrared Signal Configuration web page.



You can map these **Zone Names** to the numbered **Output Zones** using the table that appears below the signal definitions as shown below:

Zone Name or Device Name	Output Zone				
(DEFAULT)	1 V Delete				
SONYTV	1 V Delete				
(New Zone Name)	1 🖌 Add				

In the case above, signals sent via the SONYTV zone name will be sent out via HomeSeer zone 1. And from the table that appeared previously, we can see that HomeSeer zone 1 maps to "All Buses/All Devices". So, whenever a command is sent to the SONYTV zone, all IRTrans devices will send it.

However, let's say that the SONYTV device is actually in a room that is serviced by an IRTrans device identified as unit 0 on bus 1, and we only want the SONYTV commands sent to this particular unit because we have other Sony TVs around the house that we don't want affected. We would simply select output zone 200 and click on the Save button to resolve the issue as shown below:

Zone Name or Device Name	Output Zone
(DEFAULT)	1 V Delete
SONYTV	200 V Delete
(New Zone Name)	1 🗸 Add
Save	

Now commands sent via the SONYTV zone will only be sent by IRTrans Bus 1/Unit 0. In general, it's a good idea to limit IR transmission to the specific zones that contain the affected equipment.

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We recommend not using spaces in the names as this can cause problems with HomeSeer matching the devices to zones. HomeSeer will automatically create a zone for each unique device you add. Normally, the zone's name is the same as the device in all capital letters. If there is a space in the name, then HomeSeer does not make the field read-only and gives the user the illusion that it can be edited, when it cannot.

Also, editing device names after they've been added doesn't seem to create a new zone with the changed name.



# **Configuring IRTrans Server**

There are a couple of things you may wish to do to enhance compatibility and reliability between the IRTrans Server software and HomeSeer 2.

#### • Consider disabling the mini web server.

The IRTrans Server contains an integrated web server which will try to start on port 80 by default. This will prevent HomeSeer from using port 80 which might be a bit confusing for some users. We recommend either using the -no\_web command line parameter to disable the IRTrans Server web interface altogether, or use the -http\_port command line parameter to move it to another port like 82 etc.

#### • Consider filtering commands received to "learned only".

The IRTrans Server will forward all codes received to HomeSeer regardless of whether they've been learned or not. Codes which have not been learned are essentially useless to HomeSeer since they cannot be matched. Use the <u>-learned\_only</u> command line parameter to tell the IRTrans Server to only forward on received commands that were previously learned.

## TROUBLESHOOTING TIPS:

#### **IR Learning Issues**

The IRTrans units are extremely good at learning just about any IR signal, but we have had some issues learning signals without having the external power supply attached. The symptom is that the signal appears to have been learned correctly, but the device does not respond when the command is played back to it. Plugging the external power supply into the IRTrans unit seems to resolve the issue. Note that our experience suggests that the command was indeed learned properly even without the power supply, it just can't be sent properly without one.

We've also had some issues with the serial version of the IRTrans unit when plugged into an Edgeport USB-to-serial converter. This particular unit was an 8 port version, and although everything appeared to work correctly, we had trouble learning and sending signals that the devices would understand. The solution here was to connect the IRTrans unit to an onboard serial port, rather than through the Edgeport. It should be noted that the single port USB-to-serial dongles we tested worked fine with the IRTrans as long as the external power supply was also connected so reliability probably varies with manufacturer.

# **Contacting the Author:**

If you have comments about the plug-in, we'd like to hear about them!

Brian McGinnis developed the .net IRTrans Plugin using Visual Studio and CSharp in cooperation with Marcus Müller of IRTrans.

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