



DigiLinX™ Application Note

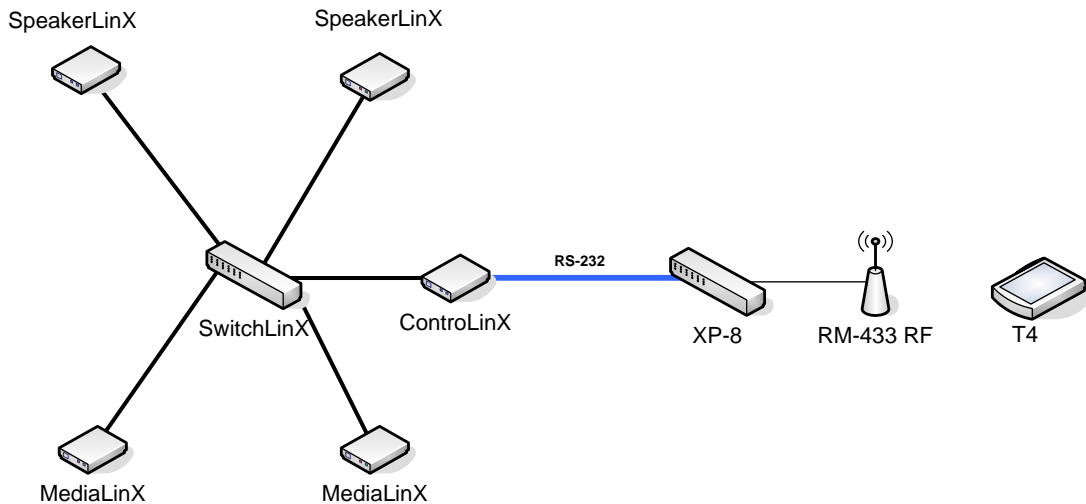
Using the RTI XP-8 to Create Time Based Events in DigiLinX

In DigiLinX Dealer Setup 2.3, *NetStreams* has introduced a new method of controlling DigiLinX from a 3rd party control system called Serial2Command (S2C). S2C allows external control systems to communicate with and control DigiLinX, enabling dealers to offer a more flexible solution for control to end users.

The S2C driver runs on a ControLinX, or on a MediaLinX Pro slot configured as a ControLinX. S2C changes the ControLinX from a device that controls other 3rd party sub-systems, to one that listens for commands from other systems and directs DigiLinX to perform various actions such as selecting a zone, selecting a source, adjusting audio volume, or triggering a macro. This capability also allows dealers to use external clocks, such as the RTI XP-8 processor, to trigger time and event based macros inside DigiLinX.

The RTI XP-8 is a high-end remote control processor for automating the operation of electronic systems in homes and office buildings. The XP-8 has 8 sense inputs and 8 relay/trigger outputs, 8 RS-232 ports, and 8 IR ports. In addition, the XP-8 interfaces with products like RTI's RM-433 RF receiver to integrate RF remotes like the RTI T4.

For the purpose of this application note, we have designed a simple DigiLinX and RTI network to illustrate the examples. This network diagram shows the key equipment:



In this example, the DigiLinX system consists of two SpeakerLinX, two MediaLinX, and one ControLinX connected to a SwitchLinX. The ControLinX is connected via RS-232 to the RTI XP-8, and the XP-8 is connected to a RM-433 RF. You will need to use a Null Modem adapter or cable for RTI Processors. In this application, you can use any RF-capable RTI remote, such as a T4.

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To enable control of DigiLinX from the RTI XP-8, first load the SerialToCommand driver onto the ControLinX. Open DigiLinX Dealer Setup project file and select your matched ControLinX. Click the IR/RS-232 tab, then select the driver dropdown and select SerialToCommand.lua.



Send configurations to all devices, and DigiLinX will be ready to receive commands through the ControLinX.

On the RTI side, the XP-8 must be trained to send commands that DigiLinX understands, and the remote must contain a GUI that the user can use to control DigiLinX. To configure the RTI processor and remote, open RTI Integration Designer.

DigiLinX uses commands called ASCII to communicate. ASCII commands are text-based and can be written by hand, or copied and pasted from DigiLinX Dealer Setup (recommended method). For a full list of DigiLinX ASCII commands, please refer to the manual "Programming for 3rd Party Control."

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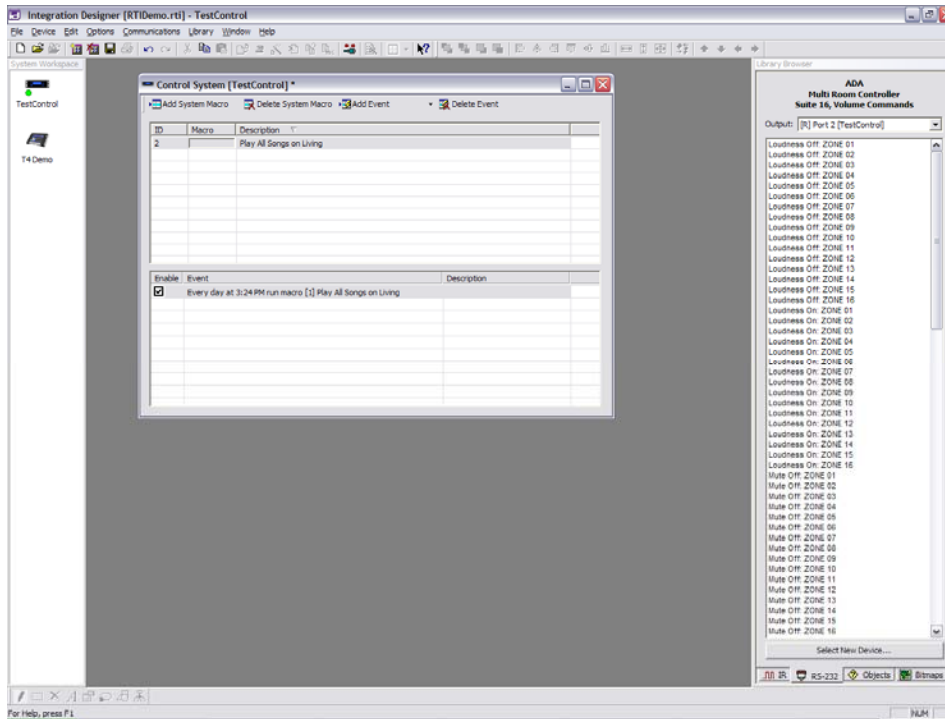
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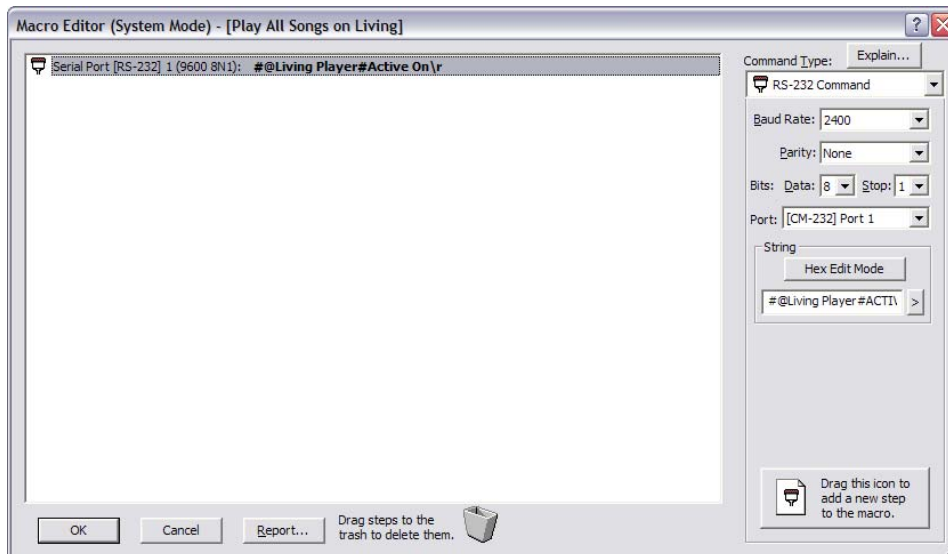


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After you have added the remote and processor in Integration Designer, click on the processor, and the Control System window will open:



First you must create a RTI system macro containing the ASCII command to control DigiLinX. Click the “Add System Macro” button at the top left corner and a new macro will appear in the list. Next, click the grey bar under the “Macro” column for your new macro to open the RS-232 screen:



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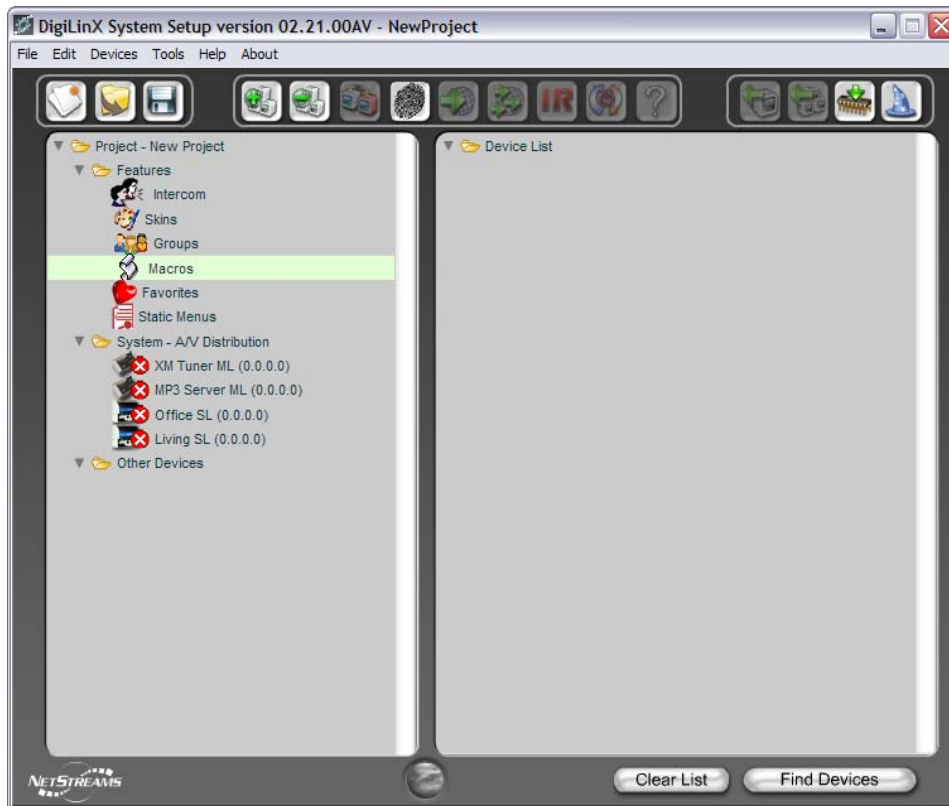


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You should always set Baud Rate to 9600, Parity to None, Data Bits to 8 and Stop Bits to 1. The port will depend on the output port from your RTI processor; just make sure to match the output port selection in Integration Designer to the physical output port that your RS-232 cable is plugged into.

DigiLinX ASCII commands start with a “#” then use an “@” to designate the zone or service being addressed. In this case, we are addressing the Player in the Living zone. Another “#” and the specific command addressed to this service, in this case “Active On” turns on the zone. Finally, the command must be finished with a carriage return, or “\r”.

ASCII commands can be hand written if you know the syntax. However, the easiest way to generate ASCII commands is to use the macro tool in DigiLinX Dealer Setup! To open the macro tool, click “Macros” at the top left corner in DigiLinX Dealer Setup.



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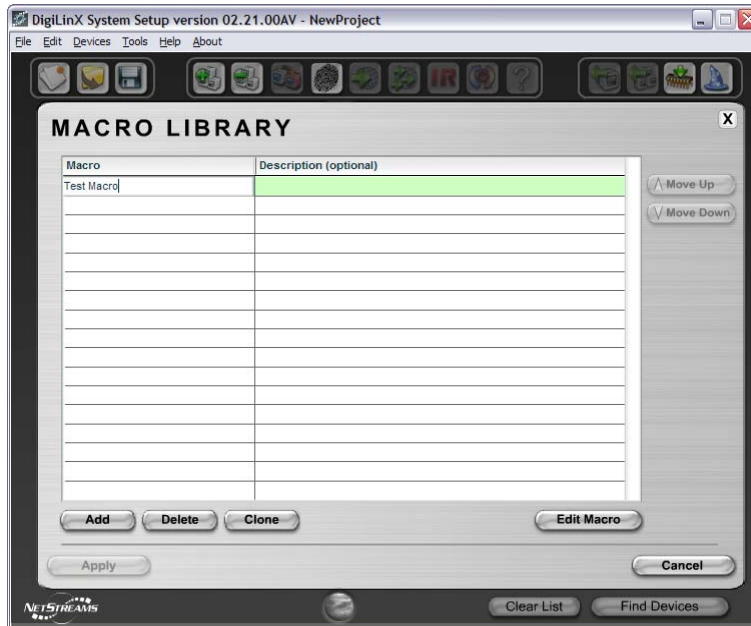
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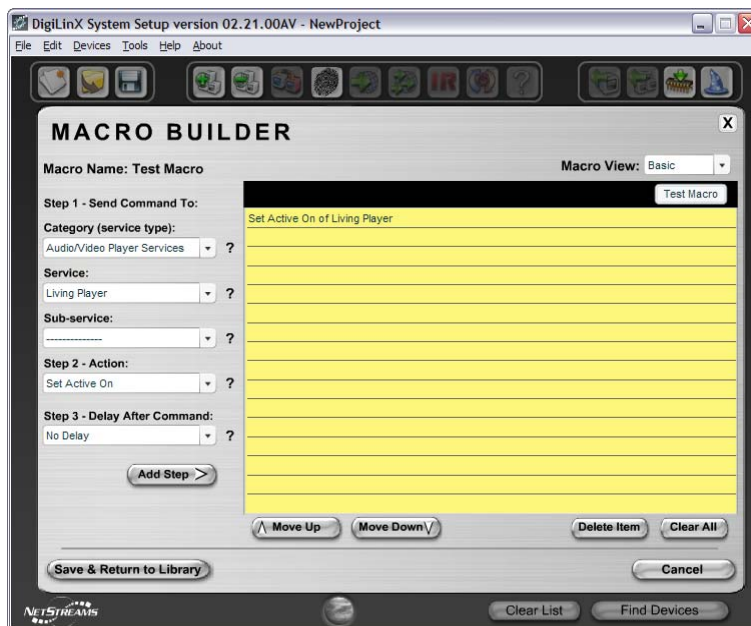
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Next, name the macro and click the “Edit Macro” button:



Next, you will build a macro to do something in DigiLinX. In this case, we will build a simple macro that turns on the Living room zone.

First, choose “Audio/Video Player Services” from the Category drop down list. Next, pick “Living Player” from the Service list. Finally, select “Set Active On” in the Action list. Last, click “Add Step.”



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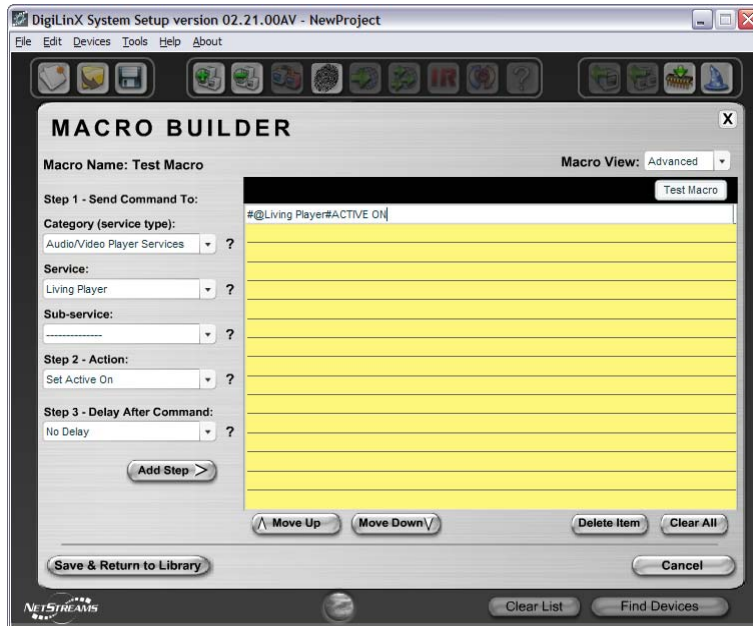
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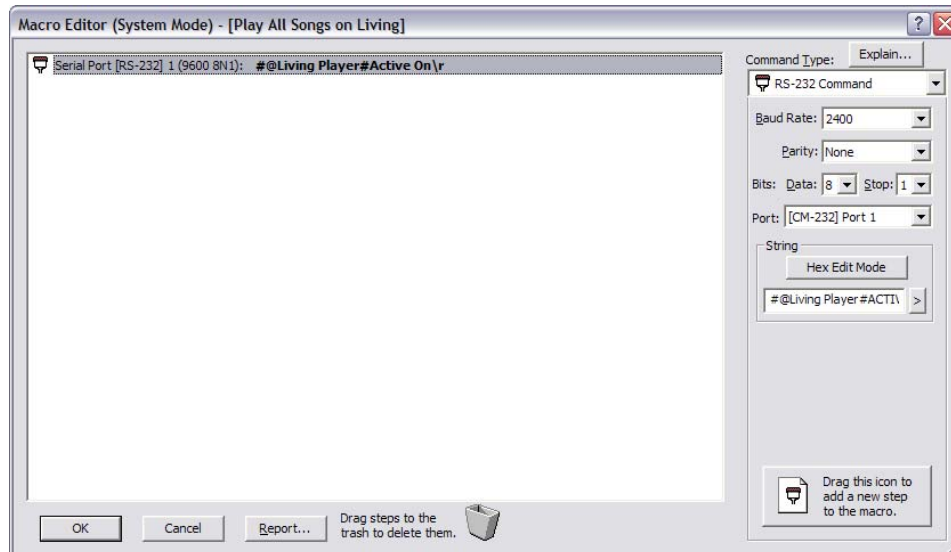
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Next, change the Macro View at the top right hand corner from Basic to Advanced.



Highlight the text, and copy it using CTRL+C. Return to RTI Integration Designer and paste the RS-232 string into the HEX edit field:

Then click and drag the icon at the bottom right into the window to add the step. Don't forget to add "\r" at the end of the string.



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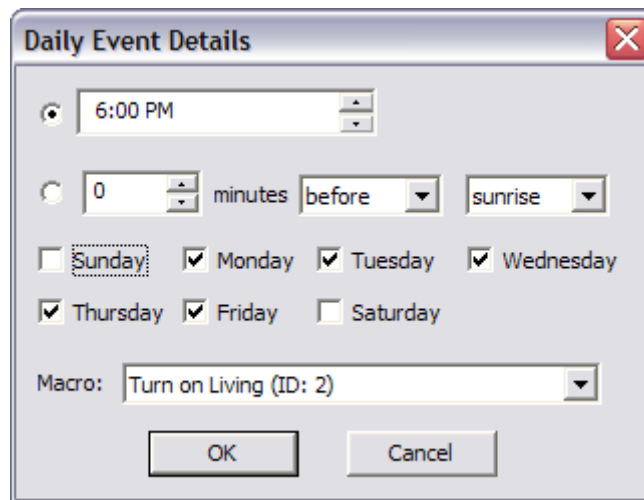


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Note that when you turn a SpeakerLinX on (using Active On), by default it turns on muted. Use the Mute Off command to un-mute the zone.

In our example, we have turned a zone on. Now we will tell the RTI XP-8 to activate this command at a certain time of day. Start by closing the Macro Editor.

Next, click “Add Event.” The drop down window allows you to choose a Sense, Daily, Periodic, or Startup event. Sense events are triggered when the RTI’s sense inputs see high or low signal (configurable). Periodic events re-occur at set intervals, such as every 15 minutes. Startup events occur when the XP-8 is turned on. Daily events happen at a certain day and time. For this example, Daily event is appropriate. Choose Daily Event from the drop down list.



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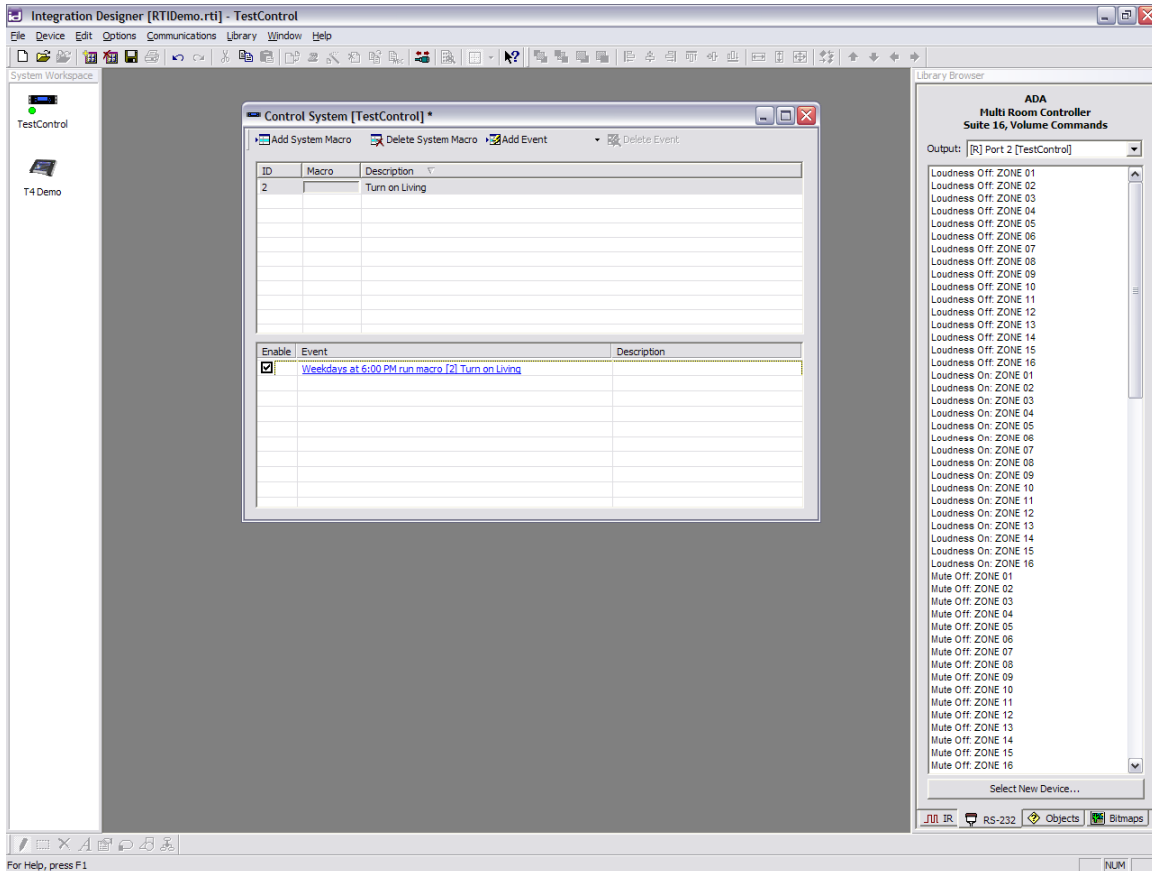
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In the Daily Event Details window, you can set the options for the event. In this case, we have set the event to occur at 6:00 PM, Monday – Friday, but not Saturday or Sunday. This might be useful for an event that you want to setup to happen right before someone comes home from work. At the bottom, choose the macro you want to associate to this event, in our case it is “Turn on Living.” Click OK.



A new event will appear in the bottom list. In this case it reads “On weekdays at 6:00 PM run macro [2] Turn on Living.”

Finally, test the timed event to make sure that it is running smoothly.

The SerialToCommand driver is a powerful tool that allows Custom Integrators to control DigiLinX from any RS-232 capable device. Another tool that NetStreams has built into DigiLinX is the ability for ASCII messages to be embedded into other drivers’ control streams. This means that if you are using a Lutron driver to control a Lutron system from DigiLinX, DigiLinX will also listen to Lutron for control, so you can now use Lutron touch panels to control DigiLinX.

We hope that this tutorial was informative and helpful. Please email us at marketing@netstreams.com if you have feedback.