Leviton (NSI) IF 501 RS-232 to DMX Module Application Guide

Description

This module allows a Crestron processor to control one or more channels of DMX-512 lighting via RS-232 control of a Leviton (NSI) I/F501 Interface.

Supported Processors

This module is supported on all CNMSX- and 2-series processors with RS-232 ports.

Compatibility			Processor Requirements	
2-Series Compatible	CNMSX Compatible	System Builder Compatible	Ethernet NOT NEEDED	Compact Flash NOT NEEDED

Leviton (NSI) IF 501 v2

Telephone: (+1)440-449-1100   support@controlworks.com

ControlWorks Consulting, LLC

http://www.controlworks.com

Serial Cable Pinout

5 1		1 5
DB9 FEMALE **CRESTRON**		DB9 FEMALE **NSI I/F501**

SERIAL SETTINGS	
COMM STD	RS232
BAUD RATE	9600
DATA BITS	8
STOP BITS	1
PARITY	NONE
HW HANDSHAKING	NONE
SW HANDSHAKING	NONE

WWW.CONTROLWORKS.COM
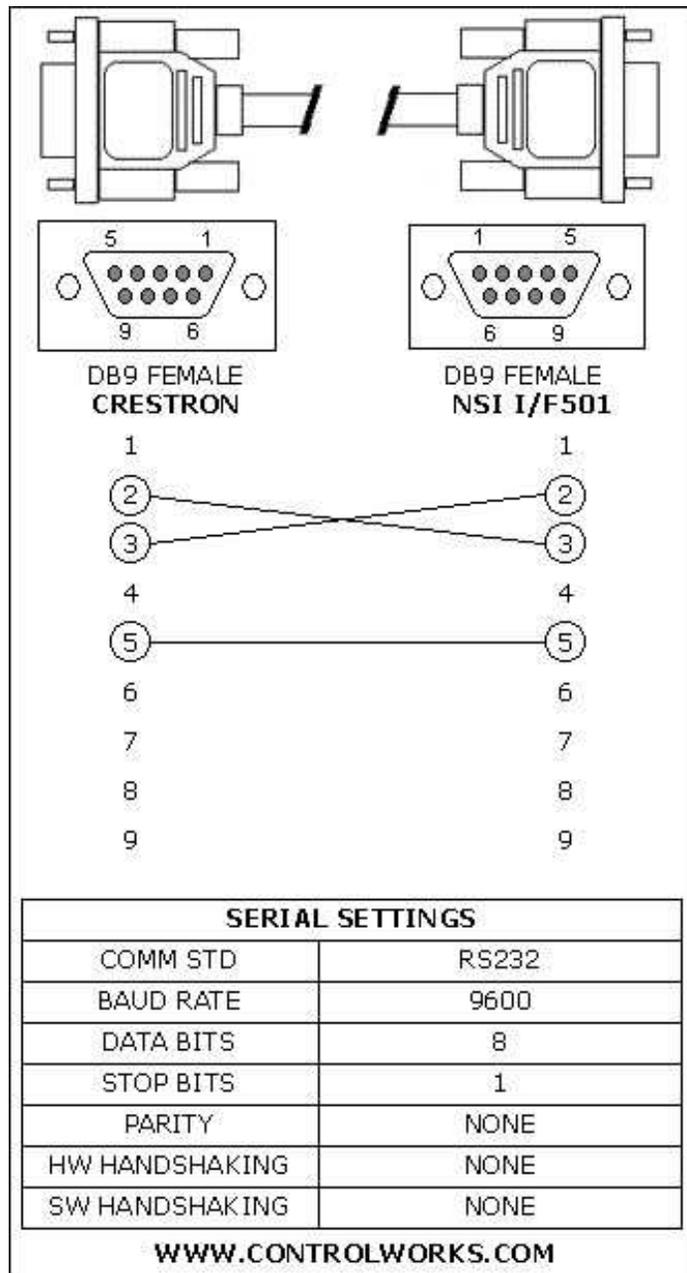
Module Application

It is strongly suggested that you load the supplied demonstration program and touchpanel to gain an understanding of the application of the module before you attempt to implement the module in your own program.

Configure your serial port for 9600 8 N 1 RS-232.

You will need to set up each instance of the module you are using with the details of the channels to be controlled. The Leviton IF 501 allows consecutive channels to be set to the same level using only one instance of the module. To do this, enter the first address to be controlled in the Start Channel Number parameter, and enter the last channel to be controlled in the Stop Channel Number parameter. To control only one channel, enter the same address in both parameters.

Connect the nsi_tx$ output to the tx$ of your serial port; if you are using multiple instances of the module, it is suggested that you route each instance's nsi_tx$ to a cat$ and then to a to the serial port; refer to the demonstration program for an example of this method.

Connect the channel_level analog input to lighting level logic (presets, sliders, ramps, etcetera). This input is full-range 0-65535 / 0-100%.

There is no feedback provided by the module.

Jumper Settings and DIP Switches
Internal Jumper and/or DIP Switch settings on the IF 501 may need to be changed for proper operation. This module was tested with the IF 501 configured with the following (non-default) settings:

DIP Switches:
Address: 1-7 down; Address 8 up
Config: 1 and 3 up; 2 and 4 down

Internal Jumpers:
P1, P4, P5, and P8 open; P7 closed; P6 open or closed (P6 open = no termination, P6 closed = termination)
JP1 jumper in position 6 only; JP6, JP7 and JP12 pins 1-2 shorted; JP8, JP9, JP10, JP11 and JP14 pins 2-3 shorted.

SystemBuilder Support

SystemBuilder support is limited to being able to drop the module into a System Builder program. In order for the module to correctly function in the SystemBuilder Environment, the "Serial JAM RS-232 for SystemBuilder.umc" module must also be dropped into the program. The "Serial JAM RS-232 for SystemBuilder.umc" module will automatically connect to a system COM port and will allow multiple instances of the IF-501 module to talk to the same port. If you are not using this module within SystemBuilder, the Serial JAM module is not required. Once the module is added to SystemBuilder, you will need to make all the appropriate connections to the system logic and touchpanel template that you are using.

In order for the IF 501 module to function you first have to drop these modules into your default User Module path.

<div align="center">

leviton_nsi_if501_channel_levels_v2.umc

Serial JAM RS-232 for SystemBuilder.umc

</div>

This path can be found under EDIT>PREFERENCES>USER DATABASE PATHS.

Next open up your project and select the *Equipment* view. In the lower right hand corner open the *User Database* and drill down the *By Device Type* until you see the Serial Jam object.
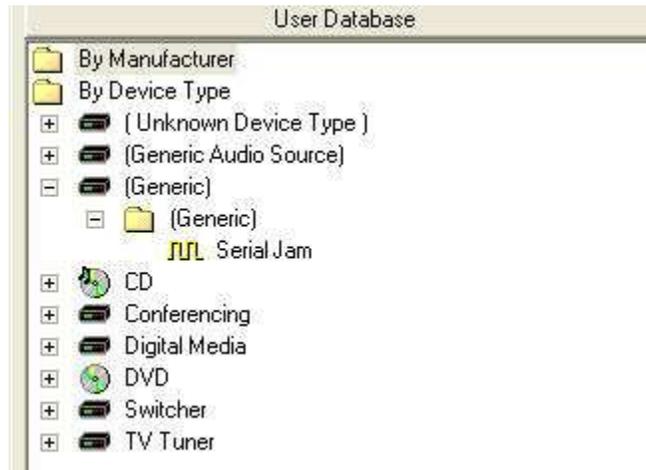
Right click on the object and select *Add to System* and name it what ever you wish (e.g. Lighting, or NSI-IF501).

Once you have added the object to your program, you have to setup the parameters for the module. Right click on the object and select *Properties.* Then select I/O Assignment from the left hand pane. Here you should verify that the Serial Settings are correctly set to 9600,N81 with no handshaking.
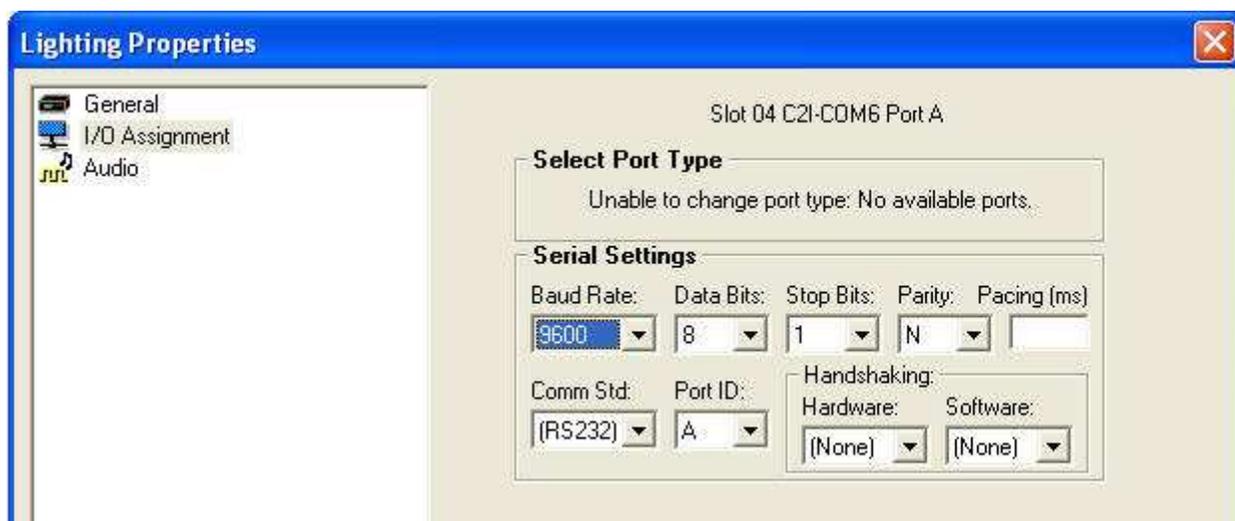
Next select Audio from the left hand pane and verify that this is NOT defined as a distributed audio source.

Once the Serial Jam module is in place and its properties verified, you can select the *Programming* view. In the right-hand pane, you should see the "I/F501" module under *User Logic Modules*. Right click on the object and select *Add to System* or *Add Multiple to System* and name each instance whatever you wish.

Once you have added as many IF-501 modules as you need to your program, you have to setup the parameters for each module. Right click on each object and select *Properties.*

Here all the Parameters of the module are available for you to edit. Please refer to the PDF help file for details on each parameter.
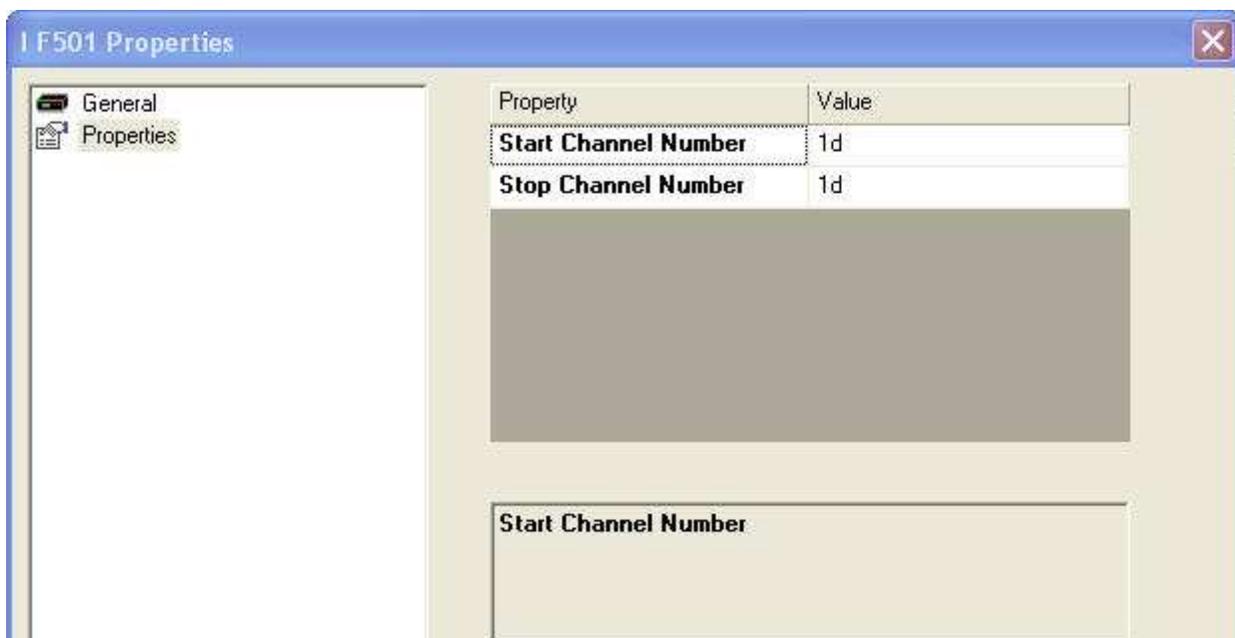
The final step in preparing the module for use is to connect the outputs of each IF-501 module to the input of the Serial Jam module. To do this select *System* from the programming pane, then select *On System Start* from the *Programmable Events* pane. First, double click in the programming pane to add a step, and add a 2s delay, then click *Apply*. Next click *New Step* in the *Edit Step* dialog and select the *Connect* radio button from the top. Choose your Serial Jam object (named "Lighting" in the example below), select the "To_Device$" command, and select the "nsi_tx$" output from your first IF501 module in the *Connect from Source* section and click *Apply*. Click *New Step* again and repeat the process until all IF501 modules are connected to the "To_Device$" input of the Serial JAM module.

The module is now ready to get tied to your user interface template. Please note that ControlWorks does not offer support on user interface template issues. Please call 888-CRESTRON for specific SystemBuilder technical support.

Signal and Parameter Descriptions

Bracketed signals such as "[signal_name]" are optional signals

DIGITAL INPUTS
This module does not utilize any digital inputs.

ANALOG INPUTS
channel_level ....Sets the channel(s) specified by the parameters to this level. Accepts a full-range analog value of 0-100% or 0-65535d and may be driven from standard lighting logic.

SERIAL INPUTS
This module does not utilize any serial inputs

DIGITAL OUTPUTS
This module does not utilize any serial inputs

ANALOG OUTPUTS
This module does not utilize any analog outputs.

SERIAL OUTPUTS
nsi_tx$. ....Tie to TX$ of serial port, or if multiple instances are used tie to a CAT$ then TX$ of serial port; see demo program for details.

PARAMETERS
Start Channel Number ....The first channel number to control. Valid DMX channel numbers range from 1 to 512, however, refer to the documentation accompanying the IF 501 for specific limitations.

End Channel Number ....The last channel number to control. If controlling only one channel, enter the same value as "Start Channel Number"

Support

This module is supported by ControlWorks Consulting, LLC. Should you need support for this module please email support@controlworks.com or call us at 440-449-1100. ControlWorks normal office hours are 9 AM to 5 PM Eastern, Monday through Friday, excluding holidays.

Before calling for support, please ensure that you have loaded and tested operation using the included demonstration program and touchpanel(s) to ensure that you understand the correct operation of the module. It may be difficult for ControlWorks to provide support until the demonstration program is loaded.

Updates, when available, are automatically distributed via Email notification to the address entered when the module was purchased. In addition, updates may be obtained using your username and password at http://www.thecontrolworks.com/customerlogin.aspx.

Distribution Package Contents

The distribution package for this module should include:

Leviton_NSI_IF501_Channel_Levels_v2.umc ....Crestron User Module to control a Leviton or NSI IF 501 DMX to RS232 interface.
Leviton_NSI_IF501_demo_tps-4500_v2.vtp ....Demo touchpanel for TPS-4500 touchpanel
Leviton_NSI_IF501_module_demo_v2.smw...................Demo program for PRO2 processor
Leviton_NSI_IF501_module_demo_v2.spz ....Compiled demo program
Leviton_NSI_IF501_module_help_v2.pdf ....Help file for this module.

Serial JAM RS-232 for SystemBuilder.umc.....................Crestron User module to allow usage of the Leviton_NSI_IF501_Channel_Levels module in a SystemBuilder program.

Revision History

V2 bob@controlworks.com 2010.06.17
    -Made module SystemBuilder compatible.

V1 lincoln@controlworks.com 2006.04.27
    -Initial limited release

Development Environment

This module version was developed on the following hardware and software. Different versions of hardware or software may or may not operate properly. If you have questions, please contact us.

Leviton/NSI Hardware	Software Version
IF 501	Unavailable
Crestron Hardware	**Firmware Version**
Crestron PRO2 Processor	4.0001.1012
Software	**Software Version**
Crestron SIMPL Windows	2.12.30
Crestron Vision Tools Pro-e	4.0.20
Crestron Database	21.03.023
Crestron Symbol Library	657
Crestron Device Library	657

ControlWorks Consulting, LLC Module License Agreement

Definitions:
ControlWorks, *We*, and *Us* refer to ControlWorks Consulting, LLC, with headquarters located at 701 Beta Drive, Suite 22 Mayfield Village, Ohio 44143-2330. *You* and *Dealer* refer to the entity purchasing the module. *Client* and *End User* refer to the person or entity for whom the Crestron hardware is being installed and/or will utilize the installed system. *System* refers to all components described herein as well as other components, services, or utilities required to achieve the functionality described herein. *Module* refers to files required to implement the functionality provided by the module and may include source files with extensions such as UMC, USP, SMW and VTP. *Demo Program* refers to a group of files used to demonstrate the capabilities of the Module, for example a SIMPL Windows program and VisionTools Touchpanel file(s) illustrating the use of the Module but not including the Module. *Software* refers to the Module and the Demo Program.

Disclaimer of Warranties
ControlWorks Consulting, LLC software is licensed to You as is. You, the consumer, bear the entire risk relating to the quality and performance of the Software. In no event will ControlWorks Consulting, LLC be liable for direct, indirect, incidental or consequential damages resulting from any defect in the Software, even if ControlWorks Consulting, LLC had reason to know of the possibility of such damage. If the Software proves to have defects, You and not Us must assume the cost of any necessary service or repair resulting from such defects.

Provision of Support
We provide limited levels of technical support only for the most recent version of the Module as determined by Us. We do not provide support for previous version of the module, modifications to the module not made by Us, to persons who have not purchased the module from Us. In addition, we may decline to provide support if the Demo Program has not been utilized. We may withdraw a module from sale and discontinue providing support at any time and for any reason, including, for example, if the equipment for which the Module is written is discontinued or substantially modified. The remainder of your rights and obligations pursuant to this license will not be affected should ControlWorks discontinue support for a module.

Modification of Software
You may not decrypt (if encrypted), reverse engineer, modify, translate, disassemble, or de-compile the Module in whole or part. You may modify the Demo Program. In no event will ControlWorks Consulting, LLC be liable for direct, indirect, incidental or consequential damages resulting from You modifying the Software in any manner.

Indemnification/Hold Harmless
ControlWorks, in its sole and absolute discretion may refuse to provide support for the application of the Module in such a manner that We feel has the potential for property damage, or physical injury to any person. Dealer shall indemnify and hold harmless ControlWorks Consulting LLC, its employees, agents, and owners from any and all liability, including direct, indirect, and consequential damages, including but not limited to personal injury, property damage, or lost profits which may result from the operation of a program containing a ControlWorks Consulting, LLC Module or any component thereof.

License Grant
Software authored by ControlWorks remains the property of ControlWorks. ControlWorks grants You the non-exclusive, non-transferable, perpetual license to use the Software authored by ControlWorks as a component of Systems programmed by You. This Software is the intellectual property of ControlWorks Consulting, LLC and is protected by law, including United States and International copyright laws. This Software and the accompanying license may not be transferred, resold, or assigned to other persons, organizations or other Crestron Dealers via any means.

The use of this software indicates acceptance of the terms of this agreement.

Leviton (NSI) IF 501 v2   ControlWorks Consulting, LLC
Telephone: (+1)440-449-1100   support@controlworks.com   http://www.controlworks.com