## Using the JNIOR with the Dolby Digital Cinema Server

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The following is an explanation of how to utilize the JNIOR with the Dolby Digital Cinema Server.

Please contact INTEG via e-mail at <u>support@integpg.com</u> or via phone at 724-933-9350 with any questions. Please visit our website at <u>www.integpg.com for software updates</u>, <u>manuals and to download the JNIOR Support Tool</u>.

NOTE: This document also can be used to connect the Series 3 JNIOR using Cinema.JNIOR.

# Overview

The Dolby cinema server works with both the JNIOR Model 410 and Model 412. The Model 410 has 8 digital inputs and 8 relay outputs. The Model 412 has 4 digital inputs and 12 relay outputs. The Dolby can also work with a 4 Relay Output Expansion Module attached to either the JNIOR Model 410 or 412.

The Dolby makes a SERIAL connection to the JNIOR. You connect the Dolby to the JNIOR using a straight through serial cable. Please connect the cable to the AUX SERIAL port along the top edge of the JNIOR.

Even though the Dolby communicates to the JNIOR via a serial connection, you can still connect the JNIOR to the Ethernet network to utilize all the other features of the JNIOR. To do this, you must configure an IP address in the JNIOR. This can be done using the JNIOR Support Tool. Please connect your JNIOR to the Ethernet network and go to the Beacon tab. Your JNIOR should be displayed on the Beacon tab. Right click on your JNIOR and select Configuration and enter the IP configuration for your JNIOR.

acon Devices	Macro Update Registry Editor Log	JNIOR Information			×
Serial Number	Hostname	P			
617120264	kev-snap 1	0 Serial Number 61	4070322		Enable Beacon 📝
614050022	kev-aws 1	MAC Address 90	-8D-1A-00-02-8C		"Responds to "Query New
618080139	BT-ModbusLogging 1	0			
718120151	kev-cinema 1	o			Auto Announce
816080015	kev-h2solutions 1	0			
816080060	kevtasker 1	0 O Use DHCP			
817120012	TP-LyonTest 1	0 O Use the following I	D Carfe		
714049001	kev-qsc 1		r Coning		
814490002	kev-datalinker 1	0 IP Addressing		DNS	
816029001	production-room-temps 1	o			
618080146	Tony'sJnior 1	0 IP Address	10 . 0 . 0 . 231	Primary DNS	10.0.0.4
918020054	Kevin_DMX_CineAsia_Dup 1	0			
718070022	WA-CameraCounter-Main 1	0 Subnet Mask	255 . 255 . 255 . 0	Secondary DNS	0.0.0.0
614050197	WA-CameraCounter-Type2 1	o			
814490001	WA-CameraCounter-Type3 1	0 Default Gateway	10 . 0 . 0 . 1	DNS Timeout	5000 ms
617120161	Program_Test_2 1	0 Default Gateway	IU. U. U. I	Divis Timeout	ms
618110247	jr618110247 1	0			
614070322	TonysJnior2 1	0 Domain Name	jnior.local		
614110208	Democrat Printing 1	0	for example "integpg.com"		
110040145	TonyCinemaTest 1	Q			
110070130	ir110070130 1	0	500) America/New York(1)	- I	OK Cancel

In order for the Dolby to interact with the JNIOR, one of two programs must be running on the JNIOR. Please note, <u>only one</u> of these programs should be running. You do not need both programs running and having both programs running may cause a problem because they will both try to control the AUX Serial port. If you really need both programs running for some reason, then you will have to configure one program to use the other serial port on the JNIOR (the RS232 port). Please contact INTEG for the details on how to do this.

One of the following programs must be running on the JNIOR to work with the Dolby:

1. Serial Control (or Serial Control PLUS on newer JNIORs)

### 2. Cinema.Jar

If you just want to control the outputs on the JNIOR and use the JNIOR inputs to control the Dolby server, then you only need the **Serial Control** program.

If you want to control individual outputs on the JNIOR and run macros on the JNIOR, then you will need the **Cinema.Jar** program.

# 1 - Using the Serial Control Program

The Serial Control program will allow you to control the outputs on the JNIOR and use the inputs on the JNIOR to control the Dolby. Serial Control is preloaded on every JNIOR shipped. A new version called Serial Control PLUS is loaded with newer JNIOR Operating Systems and is available for installation via an update project on the INTEG website. The difference between the 2 programs is Serial Control PLUS allows you to make a serial connection and Ethernet connection to the JNIOR. You can send the same ASCII commands via either the serial connection or the Ethernet connection to control the JNIOR.

### JNIOR Configuration – Starting the Serial Control application

You will have to enable the Serial Control program on your JNIOR. It is not running by default. Once you enable the program, it will always run on boot up.

The easiest way to enable the Serial Control program is via the JNIOR Web page. To use the main JNIOR web page, the JNIOR must have its IP address configured so that it can be connected to via the Ethernet network. Please see the JNIOR Getting Started Manual for more details on configuring the JNIOR IP address using the JNIOR Support Tool.

Once the JNIOR is connected to the Ethernet network, launch the main JNIOR web page by typing the JNIOR IP address in your browser address line or right clicking on your JNIOR in the Beacon tab. After the JNIOR web page is loaded, go to the Applications tab and check the box for Serial Control. Reboot the JNIOR and the program will be running.

Input/Output	Configuration Console Folders Registry Syslog Peers About	
Display Labels Inputs Counters Outputs Metering Serial I/O <b>Applications</b> Mail-Account Mail-Profiles Events Network Security Telnet WebServer FTP Protocol Modules	Enable/Configure Registered Applications          Serial Control Plus 5.0         Serial-to-Ethernet Server 6.0	
	Modbus Server 1.7 (Slave)	_
	Slave Service 1.5	
	Cinema 3.3.0	
integ Process group, Inc.		

From the Registry Editor tab in the JNIOR Web page, you can click on AppData – Serial Control folder to see the default Serial Control settings. The following shows the registry keys for the Serial Control PLUS program.

efresh New Delete		Registry Documentation	
AppData/SERIAL_CONTROL/			
⊿Registry ^	Кеу	Content	
⊿ AppData	\$Quit	false	
► Cinema/	\$Started	Mon Dec 02 14:59:40 EST 2019 9600	
⊢ \$Quit	Baud		
⊢ \$Started ⊢ Baud ⊢ DataBits ⊢ FlowControl	DataBits	8	
	FlowControl	0	
	IncomingTerminationString	١r	
⊢ IncomingTerminationSt ⊢ Name	Name	SERIAL CONTROL	
- OutgoingTerminationSt	OutgoingTerminationString	١r	
⊢ PacketSize	PacketSize	1024	
⊢ Parity ⊢ SendCounts	Parity	0 false	
⊢ SerialPort	SendCounts		
⊢ StopBits	SerialPort	AUX	
⊢ TcpPort ⊢ Version	StopBits	1	
⊿ Applications	TcpPort	9202	
► Cinema/ ► ModbusServer/	Version	5.0.122.1501	

**Dolby Configuration – with Serial Control** 

Please use the following instructions in conjunction with the Dolby documentation and the JNIOR Serial Control manual when using the Serial Control program on the JNIOR.

A) On the Dolby, you must first set the Dolby serial port to communicate with the JNIOR using the default serial port settings for the JNIOR AUX SERIAL port. The default settings for the AUX port when using the Serial Control program are:

9600 Baud 8 bits no parity no flow control 1 stop bit

Please set the Dolby to match these settings. You may have to disconnect the serial cable between the JNIOR and the Dolby to reset this port on the Dolby and JNIOR.

B) In the Dolby, there is a termination character. The Dolby default is \0A. You must change this to \0D to match the JNIOR. (The JNIOR displays \r in its Registry Key which is the ASCII representation of the HEX characters \0D.)

Configuration to match default JNIOR Serial Control settings

add       sectal port settings         data rate       9600 •         data bits       8 •         parity       even •         stop bits       1 •         flow       control *         flow control hardware •       flow         control *       flow control *			-			
add       serial port settings         data rate       9600         data rate       9600         data bits       8         parity       even         stop bits       1         flow       control'         flow control       hardware	edule	system	C			
add       data rate       9600 •         data bits       8 •         parity       even •         stop bits       1 •         flow       control         flow control       hardware •				1	rserial port set	ttings
add       data rate       9600 •       Change to       data bits       8         data bits       8 •       •       no parity'       and 'no flow       stop bits       1         stop bits       1 •       •       flow       control'       flow control none		rserial port se	ttings		data rate	9600 💌
data bits       8       •       •       no parity'       and •       no no         parity       even       •       and •       no       flow       stop bits       1         stop bits       1       •       flow       control •       flow control none         flow control       hardware       •       •       •       •       •       •         stop bits       1       •	add	data rate	9600 👻	Change to	data bits	8 🗸
flow control hardware • flow control none		data bits	8 🔻	'no parity'	parity	none 🔻
flow control hardware  flow control co		parity	even 💌		stop bits	1 🔹
flow control hardware					flow control	none 💌
rserial command settings		flow control	hardware 🔻			
serial command settings						
		rserial comma	and settings	Change to \	serial comma	nd settings—
termination 10A . OD		termination	\0A		termination	\0D
reset		reset			reset	

**Dolby Serial Automation – Outputs** 

After you have configured the Dolby serial port settings, you will then enter the commands listed in the Serial Control Manual to meet your needs.

The basic commands are:

<b>c</b> 1	- closes output 1
01	- opens output 1
c1p=1000	- pulses output 1 closed for 1000 milliseconds

Where the number 1 can be replaced with 2 through 8 to represent the first 8 outputs.

For outputs 9 - 12 in the JNIOR Model 412 or when using a 4 Relay Output Expansion Module, the number 1 is replaced with +1 through +8 to represent outputs 9 - 16. For example, c+3p=1000 would pulse output 11 for 1000 milliseconds.

## JNIOR Application Note

theatre server	serial automation	users logs	audit theatre de	vices
category output -	(T)	ume	serial command	a
category	type	name	serial co	mmand
	other			
	Enter the a	ppropriate A	SCII command	

## **Dolby Serial Automation – Inputs**

You can trigger events on the Dolby by monitoring JNIOR digital inputs. When a JNIOR digital input goes from low to high (off to on), the JNIOR will send the following text to the Dolby:

IN1=1 when input 1 goes on IN1=0 when input 1 goes off

The number 1 above can be replaced with 2 through 8 to represent the 8 JNIOR inputs.

	serve	er sen	al automa	ation	users	logs	audit	theatre of	aevices
rserial aut	omation	cues	0					-	
category	input	▼ type	🖸 other 👻	name	show star	-	serial com	mand	a
catego	iry	type			show start show paus show stop	e		serial (	command
		Ent	ter ASCI	I con	nmand	strin	ig in 'se	rial	
			nmand'		U				
		trig	ger the	Dolby	input	s sho	w start,	show	

# 2 - Using the Cinema.Jar Program

The Cinema.Jar program will allow you to control the outputs on the JNIOR, use the inputs on the JNIOR to control the Dolby and allow you to run macros on the JNIOR. The macros can be configured to control JNIOR outputs, control external devices, such as projectors, and send text to the Dolby to start, stop or pause the Dolby server.

Cinema.Jar is NOT preloaded on the JNIOR before it is shipped. A JNIOR 'update' project that works with the JNIOR Support Tool can be downloaded from the Cinema area of our website. The Cinema.Jar manual is also available on our website where you download the software.

Please download the Cinema.Jar update zip file from our website, but do not unzip it. Go to the Update tab in the JNIOR Support Tool and select Open Project and navigate to where you saved the Cinema.Jar zip file and select it. The JNIOR Support Tool will unzip the file. Click Publish Update to JNIOR and select your JNIOR.

**NOTE:** Cinema.Jar requires a JNIOR Operating System (OS) greater than 3.4, so you will probably have to update your JNIOR OS. An OS update project is available in the JNIOR Downloads section of our website.

### JNIOR Configuration – Configuring a Cinema Server Client

After you have installed Cinema.Jar, you will need to enable a Cinema Server Client. The Dolby will act as a Cinema Server Client within the Cinema.Jar program. Open the main JNIOR Web page and go to the Registry Editor tab, click on the AppData folder, then the Cinema folder and finally CinemaServerClient folder. Please modify the Cinema Server Client configuration to match the configuration in the picture below.

<u>efresh</u> New Delete		Registry Documentation
AppData/Cinema/CinemaServer	Client/	
⊿ Registry	Кеу	Content
⊿ AppData ⊿ Cinema	IncomingTerminationString	١r
⊿ Cinema ⊿ CinemaServerClient	Method	serial
Serial/ ⊢ IncomingTerminations ⊢ Method ⊢ OutgoingTerminations ⊢ PauseDelay	OutgoingTerminationString	١r
	PauseDelay	-1
	SendAck	false
	SendCounts	false
⊢ SendAck ⊢ SendCounts	SendDateStamp	false
⊢ SendDateStamp ⊢ SerialCommandsEnab	SerialCommandsEnabled	true
	TcpPort	-1
⊢ TcpPort ⊢ UnsolicitedIoAlerts	UnsolicitedIoAlerts	true
<ul> <li>Client/</li> <li>IO/</li> <li>Logic/</li> <li>Logs/</li> <li>Macros/</li> <li>Panel/</li> <li>Schedule/</li> </ul>		

You will also have to modify the Serial settings for the Cinema Server Client. Please change the Serial Port registry key to AUX (as highlighted in yellow below). Also, the default baud rate for the Cinema Server Client is 19200. You can either change the Dolby to be 19200 or change the JNIOR to be 9600. Either baud setting will work as long as they match on the JNIOR and the Dolby.

Refresh New Delete Registry Docu	mentation
AppData/Cinema/CinemaServerClient/Serial/	
⊿ Registry ▲ Key Content	
⊿ AppData Baud 19200	
⊿ Serial Parity 0	
- Baud SerialPort AUX	
Parity StopBits 1	
⊢ SerialPort ⊢ StopBits	
- IncomingTerminations	
⊢ Method	
⊢ OutgoingTerminationS ⊢ PauseDelay	
- SendAck	
⊢ SendCounts ⊢ SendDateStamp	
⊢ SerialCommandsEnab	
⊢ TcpPort ⊢ UnsolicitedIoAlerts	
► Client/	

**NOTE:** In order for the above settings to take effect, you will have to reboot the JNIOR. Please do not disconnect the power to the JNIOR to reboot. After you make your changes, the JNIOR will take up to 1 minute to save the changes to permanent memory. To reboot the JNIOR, please go to the About tab in the JNIOR Web page and click on the Reboot button so all settings will be saved properly.

#### **Cinema.Jar Configuration – Devices and Macro Files**

The details on how and why to use a Devices file and Macro file are described in detail in the Cinema.Jar Users Manual. The following provides a brief overview.

#### **Devices** File

You do not need a devices file to use Cinema.Jar with the Dolby server. You only need a Devices file if you are going to control an external device such as a digital projector. In order to control one or more projectors or other 'devices', you must configure your devices file. Below is a sample devices file for controlling a projector.

Beacon Devices Mac	ro Update Logs Sr	apshot					
Open Local File Open I	Remote File <u>Close</u> Sav	e As Publish to JNI	<u>OR</u>				
Working File : C:\Docum	ents and Settings\rshulkos	ky.INTEGPG2\Applic	ation Data\INTEG	WNIOR Suppor	t Tool\Files\de	vices_sample.csv	
Device Name	Device Type		IP Address	Port	Baud	Data Bits	Par
Projector	BARCO	~	10.0.0.50	43728			
	BARCO CHRISTIE NEC NEC SERIES 2 USL JSD100 ETH DOLBY CP650 ET DOLBY CP750 ET DOLBY 3D DFC10	HERNET HERNET IO ETHERNET					
Add Rem	ove	device fro	evice and the Device and the Device and the Device of the Device of the termination of terminatio of termin	vice Type	column.	Enter the	•

**NOTE:** After you have created your devices, you must click on the Save As and then click on Publish to JNIOR to load the devices file to your JNIOR.

You may or may not have to restart Cinema.Jar after you upload your devices file. The JNIOR Support Tool may try to restart the program or the Cinema.Jar may try to ingest the new file. It all depends on the version of software you are running. To be safe, you can reboot the JNIOR.

#### **Macro File**

The macro file stores the macros to be executed on the JNIOR. You can create a variety of macros to control the digital projector, JNIOR outputs, other devices and to send data to the Cinema Server Client.



NOTE: After you have created your macros, you must click on the Save As and then click on Publish to JNIOR to load the macro file to your JNIOR.

You may or may not have to restart Cinema.Jar after you upload your macro file. The JNIOR Support Tool may try to restart the program or the Cinema.Jar may try to ingest the new file. It all depends on the version of software you are running. To be safe, you can reboot the JNIOR.

## **Dolby Configuration**

There are a few differences in the Dolby configuration when using the Cinema.Jar program. As noted above, the default baud rate for the Cinema Server Client is 19200. Please make sure the Dolby and JNIOR match.

## **Dolby Serial Automation – Outputs**

When controlling individual outputs, the commands are the same when using Cinema.Jar except that the command must start with :: (double colon). For example, if your house lights low signal is connected to output 1, then you would enter the command ::c1p=1 000 and this would close output 1 for 1 second (1000 milliseconds).

All the commands are listed in Appendix B of the Cinema.Jar Manual.

#### NOTE: All ASCII commands used to control outputs directly must start with :: (colon, colon) when using the Cinema.Jar program. The Serial Control program does not need the ::

Instead of controlling outputs individually, you can also 'trigger' a macro on the JNIOR by typing the following command in the 'serial command' box:

Where 'macro name' is the name of the macro on the JNIOR run macro name

For example, enter the command run test in the Dolby to have the JNIOR run the macro named test

## NOTE: Do NOT use the :: in front of the run command The run command must be entered in the Dolby in lower case letters.

### **Dolby Serial Automation – Inputs**

You can trigger events on the Dolby by monitoring JNIOR digital inputs. When a JNIOR digital input goes from low to high (off to on), the JNIOR will send the following text to the Dolby:

when input 1 goes on IN1=1 IN1=0 when input 1 goes off

You can also trigger events on the Dolby by receiving ASCII text from a JNIOR macro using the 'digital cinema server client' send action.

NOTE: The JNIOR does not send the :: in front of these commands so do NOT enter the :: in the Dolby set-up.

# **Sample Pictures of the Dolby Configuration**

erial automa category out		lights 🔻 name	serial command	add	data rate	ngs 9200 🔻
category	type	name	SE	erial command	data bits 8	-
tuqtua tuqtua	iights other	Lights UP PreShow Proj ON	::c1p=1000 ::c6		parity n	one 🔻
tuqtua	🐼 other	Masking SCOPE	::c5p=1000		stop bits 1	•
nutput	💽 other	Masking FLAT	::c4p-1000		flow control n	one 💌
iutput	🗿 other	PreShow Proj OFF	::06			
nput	🙆 other	show stop	🔻 IN2 = 1 🔫			
tuqtut	🚷 lights	Lights LOW	::c3p=1000			
autput	🚱 lights	Lights MID	∷c2p=1000	uses a JNIOR digital input to control the Dolb	rserial command termination 10 reset	
ype: PNG F ze: 245 KB				Server		

category out	put 🔻 type 🔛 I	ights 🔻 name	serial command	add data rate 9600 🔻
category	type	name	serial command	data bits 8 🔻
output	💽 other	Rekl. Boern	run 4	parity none 🔻
output	💥 lights	Lys 0%	::C2P=500	
output	💿 other	Start 35mm	::C8P=1000	stop bits 1 🔻
output	😹 lights	stop rekl.	run 5	flow control none 🔻
input	💽 other	show pause	PAUSE Using a	JNIOR Macro
output	🐹 lights	Lys 50%		the PAUSE
output	🔆 lights	Lys op	::C3P=3000 text to	o the Dolby
output	💿 other	Rekl. Loop	run 2	
input	other	show start	PLAY	serial command settings-
output	other	Rekl. Stop	run 5	termination \OD
output	other	Rekl. Voksne	run 3	reset
		e run command to trigge NOTE: can also send ru		