

KODI MEDIA PLAYER

This document explains how to use the Kodi Media Player module to bring your clients' audio/video collections to life using Kodi and Crestron TouchPanels or the Crestron iOS App.

Here you will find detailed installation instructions and a reference to every signal to/from the module. If you are just looking to get going then take a look at the demo program installation video on YouTube: <https://goo.gl/CP8fb7>.

Kodi Media Player is for 3-series processors only.

New Features in v2.0

- Improved Search function: Search for Movies, TV Shows and Music all at once
- Internationalization: Module text is translated into most major languages.
- Progress Bar now has seek functionality
- Kodi Favourites fully supported.

Features:

- Complete control of Kodi using the MediaPlayer Smart Object
- Continuous scrolling media lists, regardless of length. No need for pagination.
- Feedback with album art, movie posters and fanart
- Most Kodi add-ons fully supported including Spotify
- It is not a custom control: It works on Android and iOS.

INSTALLATION

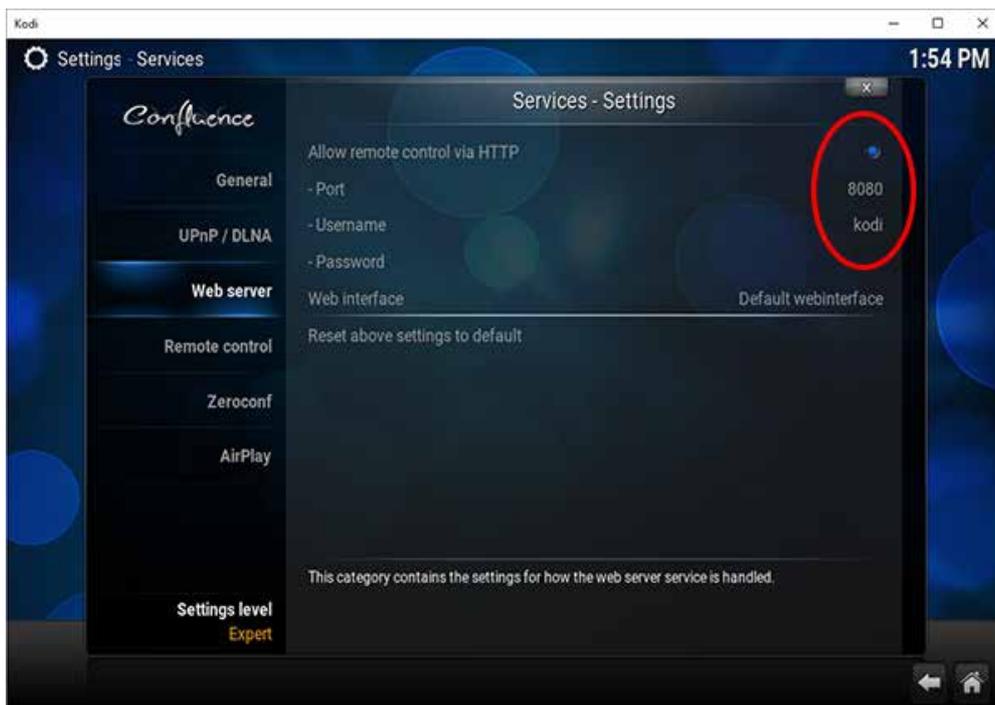
Kodi: Settings & Firewall

This module uses three ports to communicate with Kodi. All three ports must be opened on your Kodi server's firewall. Your Kodi server must also respond to pings because the module sends a ping to test that it is online before attempting to establish a connection. The ports are:

- TCP port as set in the Kodi "Web Server" settings page. This is usually 80 or 8080.
- TCP port 9090. This port is used by Kodi to inform the Crestron module of events.
- UDP port 9777. This port is used to send key presses (up, down, left, right etc.) to Kodi.

In addition, the remote control and webserver functionality must be enabled on Kodi:

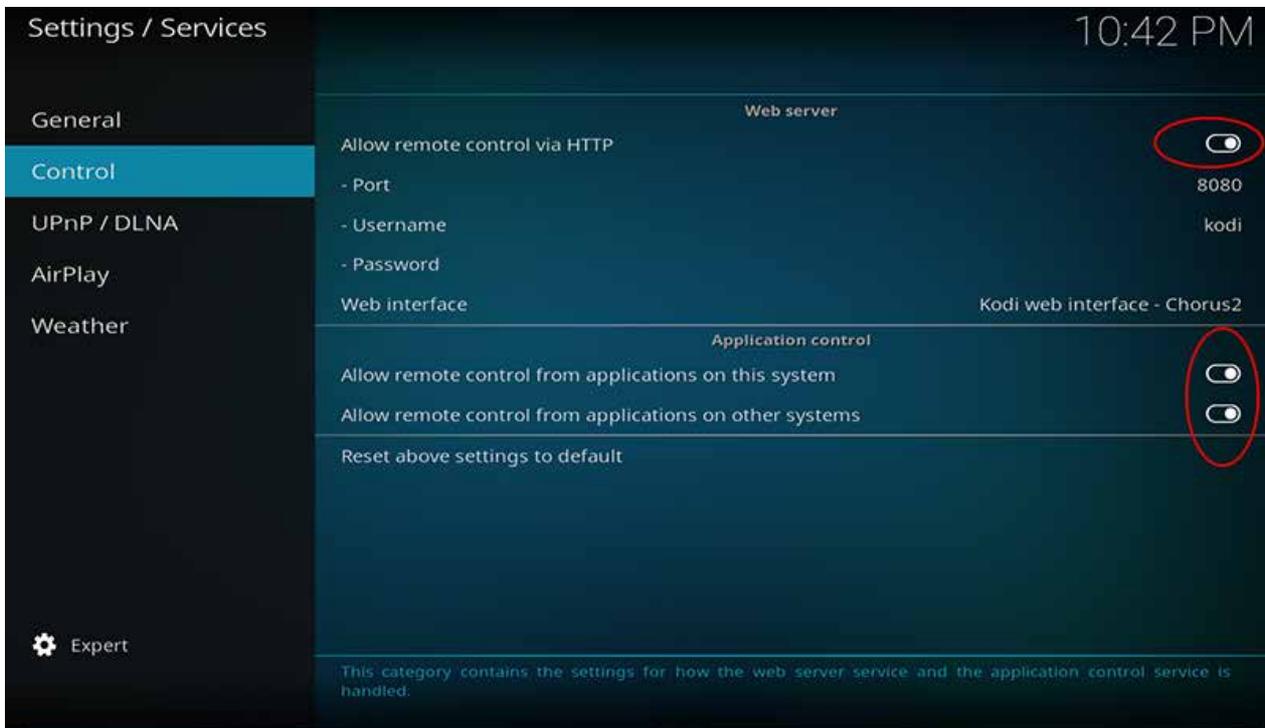
1. In Kodi go to Settings > Services > Web server and enable the webserver. Make a note of the port number: it will be your Http Port parameter in the SIMPL program.
2. Do not set the Username and Password. If you must set them then read the [Advanced Settings File](#) section and [Appendix B](#) to see how to configure the module.
3. In Settings > Services > Remote control enable both settings



INSTALLATION - continued



KRYPTON:

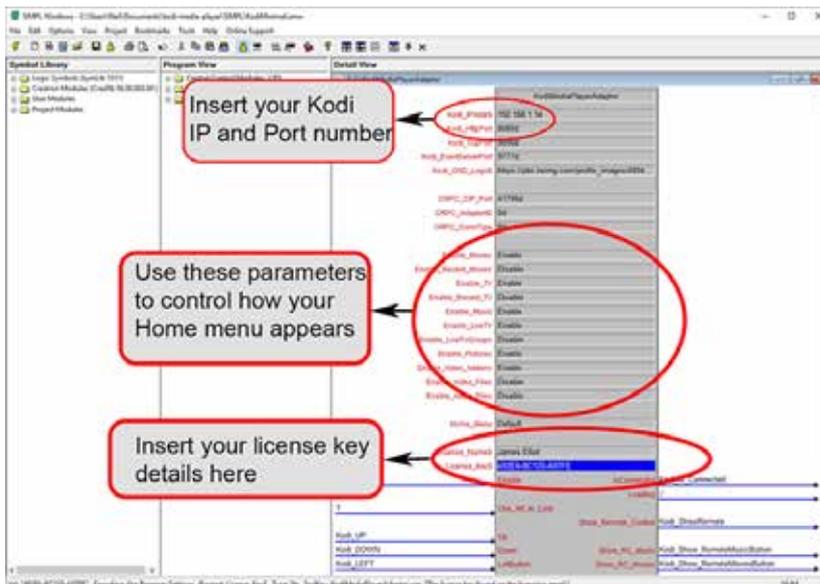


Installation – Crestron

1. Download the latest code from <http://shandonsoft.co.uk/>
2. Extract the files and open KodiMinimal.smw
3. Change the processor from CP3 to your required model
4. Edit the parameters on the module to match your Kodi server:
 - a. IP Address
 - b. Http port
5. Compile (F12) and upload to a spare program slot

INSTALLATION - continued

6. Open KodiMinimal.vtp
 - a. Edit the Host ip address in the Connection Settings entry of project properties
 - b. Compile (F12)
7. Open the resulting XPanel, you will find it in the directory "KodiMinimal.c3prj".



Installation – Multiple Kodi Servers

If you have multiple Kodi servers at different IP addresses you can use multiple instances of KodiMediaPlayerAdapter, adding one for each Kodi server. Ensure you are using different IP addresses for each instance of Kodi.

Installation – Multiple Kodi modules

This module isn't compatible with the old Kodi/XBMC module (hosted at <https://github.com/ncarthy/kodi-crestron>) because they both communicate with Kodi on port 9090. You need to comment out the old module or else remove it entirely from the program. Even if the old module is in a program on another slot, if it uses the same IP address as the new module then you will see socket errors and neither will work.

INSTALLATION - continued

Troubleshooting

If the demo program is not working and you see error log message like these:

```
119. Notice: LogicEngine.exe # 2017-02-03 19:44:58 # **Program 2 Started**
```

```
120. Error: splusmanagerapp.exe [App 2] # 2017-02-03 19:44:59 # SplusManagerApp: Got unhandled exception System.Net.Sockets.SocketException: Only one usage of each socket address (protocol/network address/port) is normally permitted
```

It might be because you have the TV Presets Smart Object on your processor (even if in another slot). The workaround is to just change the CRPC port on the Kodi module and recompile.

Similar errors will appear if you have the old version of the Kodi module on your processor.

In that case you need to comment out the old module.

UPGRADING FROM V1 to V2.0

These are the steps you should follow to upgrade from version 1.x to v2.

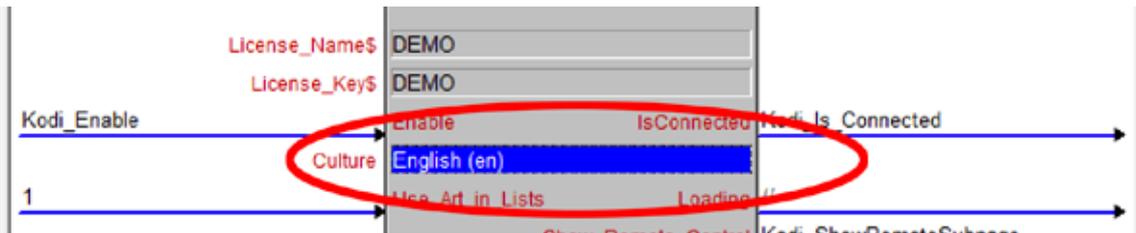
The new version changes the SIMPL+ interface and will require you to make changes to your SIMPL program.

1. Overwrite your existing copies of these files with the new versions:
 - a. KodiMediaPlayer.clz
 - b. KodiMediaPlayerAdapter.usp
 - c. KodiMediaPlayerAdapter.ush
2. Open your SIMPL smw project file. You will see errors and incomplete signals.
3. Click “Resync Project” from the edit menu
4. Two parameters were removed from version 2.0 so you will have to:
 - a. Re-enter the Home menu options (set each parameter to Enable or Disable as required)
 - b. Reset the Home_Menu parameter to “Default”
 - c. Re-enter your license key details
 - d. Select a language in the Culture parameter.
5. New input and output signals have been added so you will have to comment out the new signals. Make sure the CRPC serial signals are connected. They are the last signals on both input and output and are called “From_Media_Player” and “To_Media_Player”.
6. Recompile and upload.
7. If you are seeing errors then email me at neil.carthy42@gmail.com

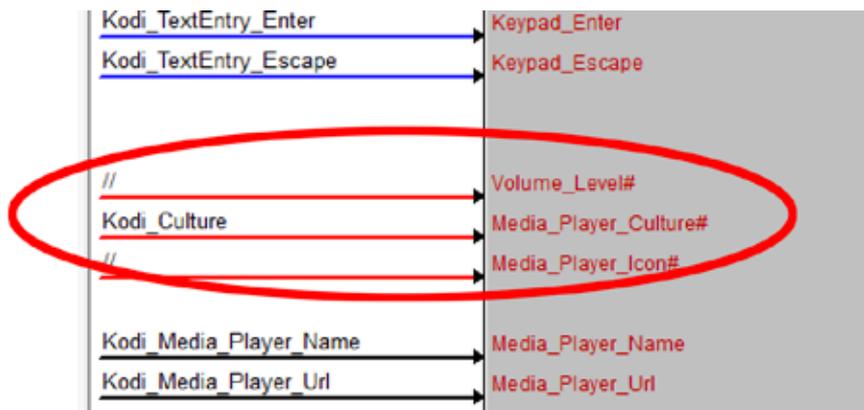
LOCALIZATION: USING LANGUAGES

Kodi Media Player comes with International English selected by default but you can select one of 50 other languages to see module text in your local language. If you may have to use a *_INT them in your VT Pro-e project.

At design time choose the language you need from the drop down:



Alternatively, you can set the language at run time by passing an analog value to the Media_Player_Culture# signal:



Valid values for this input are given in [Appendix A](#).

Some languages do not have translations for every string. The translations come from the [Kodi project](#) so if you want to add missing strings for your language you must do it through them.

At run time you can see what language has been selected via the signal "Current_Culture":



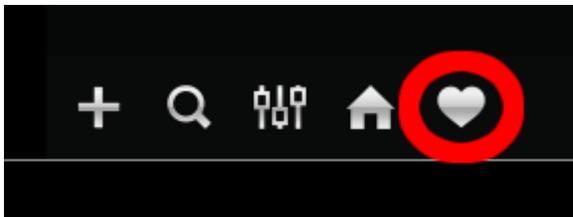
LOCALIZATION: USING LANGUAGES

KODI FAVOURITES

Version 2.0 of the Kodi Media Player introduced complete support for the Kodi Favourites screen. Favourites are available from the Kodi home page:



In the Kodi Media Player UI favourites are access through the Favourites icon at the bottom of the menu:



ADDING FAVOURITES

Press and hold an item in the menu and the advanced play menu will appear. Select the “Add to Favourites” button to add a favourite. Favourite items appear in the order in which they were added. There is no ability to sort the favourites menu.



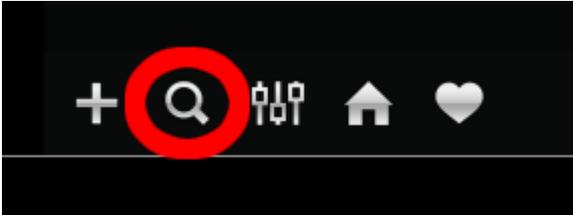
REMOVING FAVOURITES

Press and hold the item in the favourites menu a sub menu will appear. Select the “Remove from Favourites” button. Counter-intuitively adding the item to favourites a second time will also remove it.

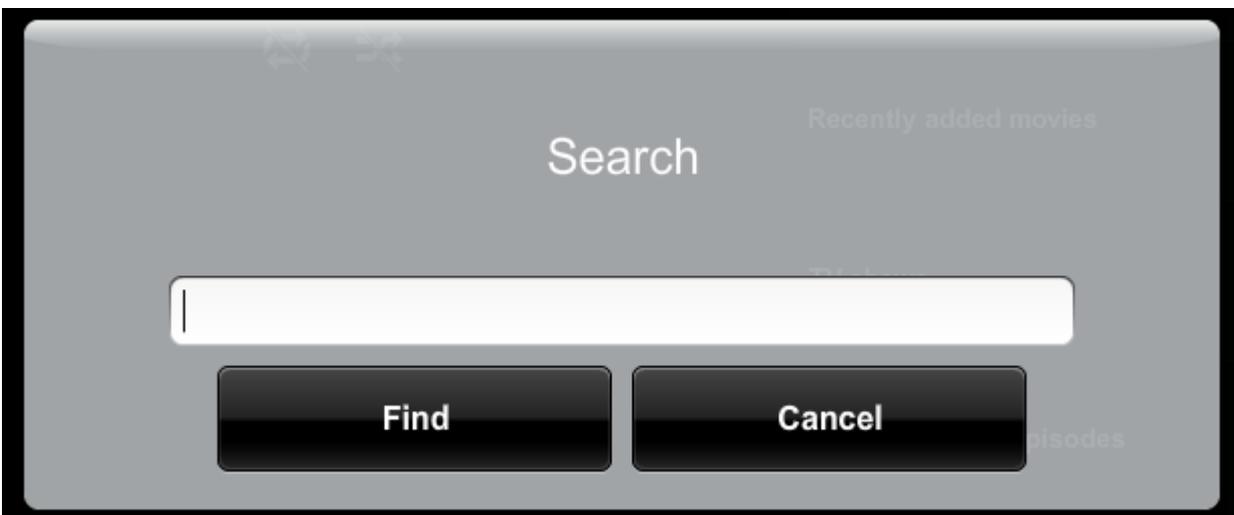
You will have to exit the favourites menu and re-enter for the item to completely disappear.

SEARCH FUNCTION

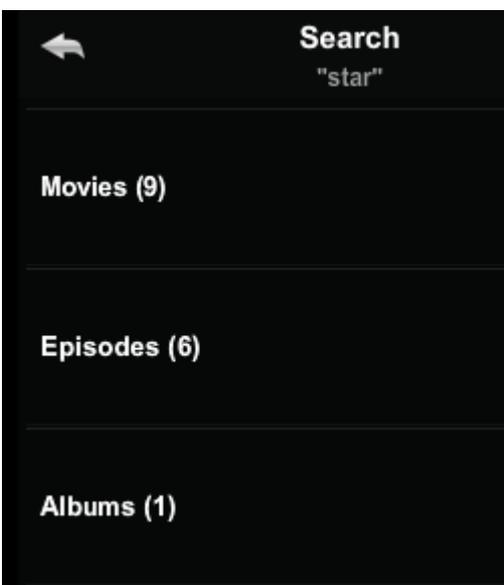
Version 2.0 of the Kodi Media Player improved the search functionality. What used to be a “jump to” function is now a true search capability.



Pressing this button shows the in-built Crestron search screen. At present the language is always English and cannot be changed:



Enter the text string that you would like to search for. The search looks for any instances of that string so “star” will match “Star Wars” and “Superstar”. The search returns a window like this:



Clicking on each line will bring up a list of the items that has been found.

If no items are returned then “Item not found” will be shown.

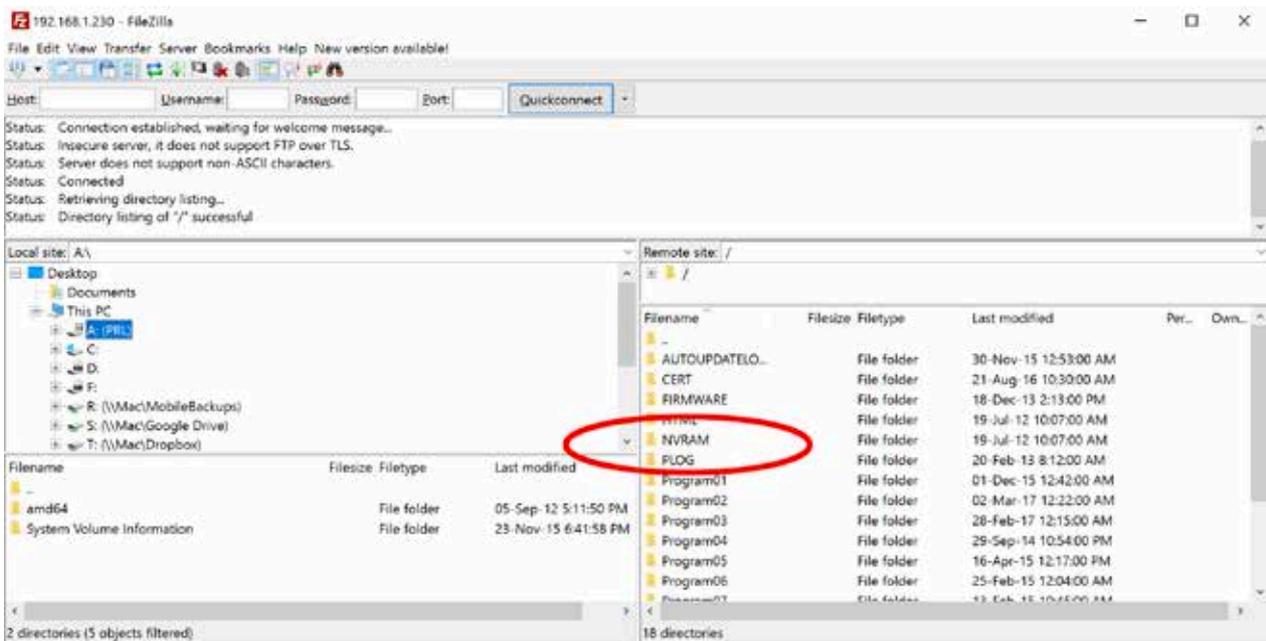
ADVANCED SETTINGS FILE

Some configuration settings can only be changed by use of an advanced settings xml file.

This file should be saved in the NVRAM directory of the processor and named “kmp_settings.xml”. Most users will not need to use this file.

The settings file is read at the start of the program. If you make a change to the settings file you will have to restart the program.

If the file is present any settings it contains will override the values provided via SIMPL parameters.



The format of the file is as follows:

```
<?xml version="1.0"?>
<settings>
  <jumpsearch>false</jumpsearch>
  <nofavourites>false</nofavourites>
  <!-- Other settings go here -->
</settings>
```

See [Appendix B](#) for a full list of advanced settings options. The name of the setting is case insensitive so “JumpSearch”, “jumpsearch” and “jUmPSeEarch” will all work.

SIGNALS & PARAMETERS

Parameters

Parameter Name	Description	Example value
Kodi IP Address	The IP address of the Kodi server in dotted number notation.	192.168.1.10
Kodi Http Port	The port the Kodi http server is listening on, usually 80 or 8080.	8080
Kodi TCP Port	The port the Kodi JSON API is listening on, usually 9090.	9090
Kodi Event Server Port	The port the Kodi Event Server is listening on, usually 9777.	9777
Kodi Notification Logo	The url of an image that will be used to decorate on screen notifications.	The url in the demo program is the Crestron logo but any valid image url will work.
CRPC¹ CIP Port	The port for communications between the module and the Crestron UI.	41798
Enable Movies	Specify whether Movies appears as a Home menu item.	Valid values: enable/disable
Enable Recent Movies	Specify whether Recently Added Movies appears as a Home menu item.	Valid values: enable/disable
Enable TV Shows	Specify whether TV Shows appears as a Home menu item.	Valid values: enable/disable
Enable Recent TV Shows	Specify whether Recently Added TV Shows appears as a Home menu item.	Valid values: enable/disable
Enable Music	Specify whether Music appears as a Home menu item.	Valid values: enable/disable
Enable Live TV	Specify whether Live TV appears as a Home menu item.	Valid values: enable/disable
Enable Live TV Groups	Live TV Groups shows channels by group	Valid values: enable/disable
Enable Pictures	Specify whether Pictures appears as a Home menu item.	Valid values: enable/disable
Enable Video Addons	Specify whether Video Add-ons appears as a Home menu item.	Valid values: enable/disable
Enable Video Files	Specify whether Video Files appears as a Home menu item.	Valid values: enable/disable
Enable Audio Files	Specify whether Audio Files appears as a Home menu item.	Valid values: enable/disable
Home Menu	Set the root menu as either the default menu or the Movies menu or the Music menu.	Valid values: Default, Movies, Music

¹ CRPC stands for Crestron remote procedure call. It a Crestron proprietary protocol for calling methods on a remote object. The Media Player smart object communicates with the SIMPL program using this protocol.

SIGNALS & PARAMETERS - continued

Parameter Name	Description	Example value
License Name	The name of the developer or in the authorisation email. For site licenses it will be the company name.	Joe R. Bloggs
License Key	The key supplied in the authorisation email. It is 17 characters long.	XXXXX-XXXXX-XXXXX
Culture	Choose the language for the module	0-59 See AppendixA

Input Signals

Signal Name	Type	Description	Remarks
Enable	Digital	High = Enable this module; allow commands to be passed to Kodi and listen for responses	Keep this high during the entire operation of the module.
Use Art In Lists	Digital	High = Show album art and movie posters when browsing media lists. Low = Text only.	Normally just put 1 on this signal.
Up	Digital	Navigate up in menus; skip forward large during media playback.	Can be held down to speed through menus.
Down	Digital	Navigate down in menus; skip back large during media playback.	Can be held down to speed through menus.
Left	Digital	Navigate left in menus; skip forward small during media playback.	Can be held down to speed through menus.
Right	Digital	Navigate right in menus; skip back small during media playback.	Can be held down to speed through menus.
Select	Digital	Select the current item in a menu	
Back	Digital	Go back to previous menu	
Stop	Digital	Stop the currently playing item or slideshow	
Volume Up	Digital	Increase volume. Volume can be 0 -100.	Hold down to keep increasing.
Volume Down	Digital	Decrease volume. Volume can be 0 -100.	Hold down to keep decreasing.
Mute	Digital	Mute audio	Volume level number does not change while muted.
OSD	Digital	Show the Kodi On Screen Display during playback	
Context Menu	Digital	Show the "right-click" menu while navigating lists on the Kodi interface	

SIGNALS & PARAMETERS - continued

Signal Name	Type	Description	Remarks
Info	Digital	Show the Kodi information page during playback	
Codec	Digital	Show the Kodi codec page during playback	
EPG_Guide	Digital	Show the EPG for Live TV	
Next Subtitle	Digital	Step through the available subtitle streams	
Next Audio	Digital	Step through the available audio streams	
Fullscreen	Digital	Toggle between fullscreen video mode and the home screen.	Only works during video playback.
Movies Window	Digital	Go to the Movies – Titles window on Kodi	
TV Shows Window	Digital	Go to the TV Shows window on Kodi	
Pictures Window	Digital	Go to the Pictures/Photos window on Kodi	
Albums Window	Digital	Go to the Music – Albums window on Kodi	
Artists Window	Digital	Go to the Music – Artists window on Kodi	
Home Window	Digital	Go to the Home Page window on Kodi	
Tv Channels Window	Digital	Go to the TV – All Channels window on Kodi	
Favourites Window	Digital	Toggle the Favourites window on Kodi	
Shutdown	Digital	Shutdown the Kodi server	
Reboot	Digital	Reboot the Kodi server	
Hibernate	Digital	Hibernate the Kodi server	If Hibernate is not working try Suspend.
Suspend	Digital	Suspend the Kodi server.	If Suspend is not working try Hibernate.
Minimize	Digital	Minimize the Kodi server window.	
Play	Digital	Play button	For non-smart graphics TP
PlayPause	Digital	Toggle between play and pause	For non-smart graphics TP

SIGNALS & PARAMETERS - continued

Signal Name	Type	Description	Remarks
Pause	Digital	Pause button	For non-smart graphics TP
Forward	Digital	Start fast forwarding. Repeated presses increases the forwarding speed.	For non-smart graphics TP
Reverse	Digital	Start rewinding. Repeated presses speeds up the rewinding speed.	For non-smart graphics TP
PlayNext	Digital	Play the next item in the playlist or, in a movie, jump to the next bookmark.	For non-smart graphics TP
PlayPrevious	Digital	Play the previous item in the playlist or, in a movie, jump back to the previous bookmark.	For non-smart graphics TP
Shuffle_Button	Digital	Toggle the playlist shuffle status.	For non-smart graphics TP
Repeat_Button	Digital	Set the playlist to repeat	For non-smart graphics TP
Keypad 0-9	Digital	Send the remote control key 0 - 9	For non-smart graphics TP
Page Up	Digital	Page up in a long list	For non-smart graphics TP
Page Down	Digital	Page down in a long list	For non-smart graphics TP
Next Letter	Digital	Skip to next letter in a long list	For non-smart graphics TP
Prev Letter	Digital	Skip to next letter in a long list	For non-smart graphics TP
Keypad Enter	Digital	Send text entry string to Kodi	
Keypad Escape	Digital	Escape from the text entry subpage. Quits all open dialogs on Kodi.	
Volume Level #	Analog	Set the volume level for Kodi.	Valid values are 0-100
Media Player Culture#	Analog	Set the language for the module	Valid values are 0-59 See AppendixA
Media Player Icon #	Analog	The index of the icon to use for the media player.	Valid values are 1-9. Overwrites URL
Media Player Name	Serial	The name of the media player.	Maximum 250 characters
Media Player URL	Serial	A url that links to the image that you would like to use in place of the default icon.	Maximum 250 characters. Overwrites Icon #
Search Text	Serial	Search Text from the Search subpage	Need for search in addons and also for Kodi Search page.

SIGNALS & PARAMETERS - continued

Signal Name	Type	Description	Remarks
Send Button	Serial	Send a keyboard button. For the full range of buttons see keyboard.xml keymap file	Reference: Keymap
Send ActionID	Serial	Send an action request to Kodi. This is like a button press.	Reference: Action IDs
Send BuiltinFn	Serial	Send a built-in function request to Kodi.	Reference: Built-in Functions
From Media Player	Serial	Carries CRPC from smart object to this module.	From Media Server Object Router

Output Signals

Signal Name	Type	Description	Remarks
Is Connected	Digital	HIGH when TCP communications are established between Kodi and the module.	
Loading	Digital	HIGH when loading data from Kodi.	
Show Remote Control	Digital	When HIGH the Remote Control subpage is visible.	
Show Text Entry	Digital	When HIGH the Text Entry subpage is visible.	
Show Remote Control Music	Digital	When HIGH the Music button is visible on the Remote Control subpage.	
Show Remote Control Movies	Digital	When HIGH the Movies button is visible on the Remote Control subpage.	
Show Remote Control TV Shows	Digital	When HIGH the TV Shows button is visible on the Remote Control subpage.	
Show Remote Control Pictures	Digital	When HIGH the Pictures button is visible on the Remote Control subpage.	
Show Remote Control Live TV	Digital	When HIGH the Live TV button is visible on the Remote Control subpage.	
Is Muted	Digital	This is HIGH when Kodi audio is on mute.	
Is Shuffled	Digital	This is HIGH when the current playlist is playing in random order	For non-smart graphics TP

SIGNALS & PARAMETERS - continued

Signal Name	Type	Description	Remarks
Play FB	Digital	HIGH when media is playing.	For non-smart graphics TP
Stop FB	Digital	HIGH when nothing playing	For non-smart graphics TP
Pause FB	Digital	HIGH when playing item is paused	For non-smart graphics TP
Rewind FB	Digital	HIGH when rewinding	For non-smart graphics TP
Fast Forward FB	Digital	HIGH when fast forwarding	For non-smart graphics TP
Movie Playing FB	Digital	HIGH when a movie is playing	
Music Playing FB	Digital	HIGH when music is playing	
Tv Show Playing FB	Digital	HIGH when a TV Show is playing	
Slideshow Playing FB	Digital	HIGH when a slideshow is playing	
Live TV Playing FB	Digital	HIGH when Live TV is playing	Position of stop button changes when this is HIGH
Volume Level	Analog	The current level of Kodi volume (0-100)	
Time Percentage FB	Analog	The percentage of time that the playing item has been playing for. Range is 0-100.	For non-smart graphics TP
Repeat Status FB	Analog	Can be one of these values: <ul style="list-style-type: none"> · 0 = Repeat Off · 1 = Repeat On · 2 = Repeat All 	For non-smart graphics TP
Volume Level\$	Serial	A serial representation of the Volume Level analog signal.	For non-smart graphics TP
Now Playing Line1	Serial	The title of the currently playing movie or song. For TV shows it is the show title.	For non-smart graphics TP
Now Playing Line2	Serial	For songs this line will show the name of the artist. For movies it is the tagline. For TV episodes it shows the season name and episode number.	For non-smart graphics TP
Now Playing Line3	Serial	For songs this line will show the album name. For movies it is the tagline. For TV episodes this is the episode title	For non-smart graphics TP

SIGNALS & PARAMETERS - continued

Signal Name	Type	Description	Remarks
Now Playing Line4	Serial	The genre of the currently playing item	For non-smart graphics TP
Now Playing Line5	Serial	The title of the next track in the playlist (if any)	For non-smart graphics TP
Now Playing Position	Serial	The position in the current playlist. Example "3of 12"	For non-smart graphics TP
Now Playing Url	Serial	The url of the album art/movie poster of the currently playing item. Beware: some urls may exceed the 255 character limitation for Crestron serials, rendering the image blank.	For non-smart graphics TP
Fanart Url	Serial	The url of the fanart of the currently playing item. Works for Movies, TV Shows and music artists.	
Metadata (JSON)	Serial	A string containing all the metadata about the current track, in JSON format	
Time Elapsed	Serial	A string showing the length of time elapsed. "03:45"	For non-smart graphics TP
Time Remaining	Serial	A string showing the length of time remaining. "1:23:45"	For non-smart graphics TP
Current Culture	Serial	The current language used in the module	Example value is "de" for the German language. See AppendixA
Error Message	Serial	This signal can be used to inform users of error messages. This is mostly used when debugging the code or troubleshooting.	
To Media Player	Serial	Carries CRPC from this module to the smart object on the UI.	

APPENDIX A: Available Languages

Analog Value	.Net Culture	Language Name	Coverage
0	en	English	100%
1	en-US	English (United States)	100%
2	fr	French	100%
3	de	German	100%
4	es	Spanish	100%
5	en	divider	100%
6	af	Afrikaans	100%
7	ar	Arabic	92%
8	az	Azerbaijani	45%
9	be	Belarusian	90%
10	bg	Bulgarian	99%
11	ca	Catalan	100%
12	cs	Czech	100%
13	da	Danish	100%
14	de	German	100%
15	el	Greek	100%
16	en	English	100%
17	en-US	English (United States)	100%
18	es	Spanish	100%
19	et	Estonian	90%
20	eu	Basque	100%
21	fa	Persian	32%
22	fi	Finnish	100%
23	fo	Faroese	86%
24	fr	French	100%
25	gl	Galician	100%
26	he	Hebrew	100%
27	hi	Hindi	54%
28	hr	Croatian	100%
29	hu	Hungarian	100%
30	hy	Armenian	49%
31	id	Indonesian	94%

APPENDIX A: Available Languages

32	is	Icelandic	94%
33	it	Italian	100%
34	ja	Japanese	99%
35	ko	Korean	100%
36	lt	Lithuanian	100%
37	lv	Latvian	94%
38	mk	Macedonian (FYROM)	91%
39	mn	Mongolian	55%
40	ms	Malay	100%
41	nl	Dutch	100%
42	pl	Polish	100%
43	pt	Portuguese	100%
44	ro	Romanian	100%
45	ru	Russian	100%
46	sk	Slovak	100%
47	sl	Slovenian	94%
48	sq	Albanian	90%
49	sr	Serbian	100%
50	sv	Swedish	100%
51	ta	Tamil	90%
52	te	Telugu	35%
53	th	Thai	100%
54	tr	Turkish	100%
55	uk	Ukrainian	99%
56	uz	Uzbek	60%
57	vi	Vietnamese	81%
58	zh-CHS	Chinese (Simplified) Legacy	100%
59	zh-CHT	Chinese (Traditional) Legacy	100%

APPENDIX B: Advanced Settings

Name	Type	Description
BufferSize	ushort	The TCP socket buffer size. The default value is 32767.
CRPCPort	ushort	CIP port for CRPC traffic. Must not be used by any other program/module.
CRPCAdapterID	ushort	Identifies on which subnet of the control system the device is on (0 - LAN, 1 - Control Subnet). Always use 0.
CRPCConnectionType	ushort	Identifies whether to use join or direct connection (0 - Join, 1 -Direct). Always use 0.
Culture	string	The culture or locale for this module. Default value is 'en'. Valid values are given in the ".net culture" column of Appendix A
EventServerPort	ushort	Port for passing keypress commands. Usually 9777.
HttpPort	ushort	Port for downloading images and sending commands.
HttpUsername	string	If you have set the http API username on Kodi (via the Settings > Services > Control menu) then you can use this setting to inform the Crestron module. The default value is 'kodi'.
HttpPassword	string	If you have set the http API password on Kodi (via the Settings > Services > Control menu) then you can use this setting to inform the Crestron module.
IPAddress	string	IP Address of Kodi server in dotted notation. No leading zeros.
JumpSearch	bool	If 'true' then use the old search type of jumping to the menu item that starts with the search string. If 'false' then use the new search type of a special sub menu with search results for each media type.
NoFavourites	bool	If 'true' do not show the favourites button at the bottom of menus. The favourites button looks like a heart.
OsdLogoUrl	string	Image path/url for Kodi on-screen

APPENDIX B: Advanced Settings

notifications.		
TCPPort	ushort	Port for receiving event data from Kodi.
UseArtInMenuLists	bool	'true' = Show album art and movie posters when browsing media lists. 'false' = text only.
JustPlayOneFile	bool	This setting is used when selecting items to play with 'Files-Audio' or 'Files-Video' in the browse menu. 'true' = Just play the selected item only. 'false' = Add all items in the directory to a playlist and start playback from the selected item.
RepeatPlaylist	string	Used when selecting items to play using the browse menus. 'off' = [Default] Play the playlist once 'one' = Repeat the currently playing item 'all' = Repeat the whole playlist

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

Definitions:

ShandonSoft, We, and Us refer to Shandon Software Limited, located at 26 Montpelier Square, London, SW7 1JY, UK. *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 CLZ, 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.

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Provision of Support

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