



Manufacturer: Linn Product Ltd.
Model: DS/DSM
Device Type: Media Streamer

CONTACT SUPPORT:

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NOTES:	

GENERAL INFORMATION

SIMPLWINDOWS NAME:	Linn_Demo_CP4
CATEGORY:	Miscellaneous
VERSION:	3.0.14
SUMMARY:	This driver offers an interface for extensive network control over several Linn DS/DSM devices including the Linn Kustom DSM. Rather than communicating directly with a single device it communicates with Linn's CI Gateway software. Within the driver, a device can be selected from a list of Linn DS/DSM devices on the local network and then control over basic functionalities is available. Up to 20 Linn devices can be controlled using this driver (note that a Kustom DSM acts like several devices).
GENERAL NOTES:	<p>The package includes a demonstration project in .smw format to aid with integration into a Crestron project. Additionally, touch panel designs have been created in Crestron VTPro-e that work alongside the demonstration project; these are used for demonstration purposes although elements can be incorporated into your project.</p> <p>For more detailed installation instructions see the setup guide document on Linn docs: https://docs.linn.co.uk/wiki/index.php/Crestron/Linn_Crestron_4-Series_Driver_for_SIMPL_Windows</p>
CRESTRON HARDWARE REQUIRED:	4-Series Crestron Processor
SETUP OF CRESTRON HARDWARE:	Crestron Processor on the same local network as the Linn equipment
VENDOR FIRMWARE:	Requires Linn DS/DSM with firmware 4.105.524

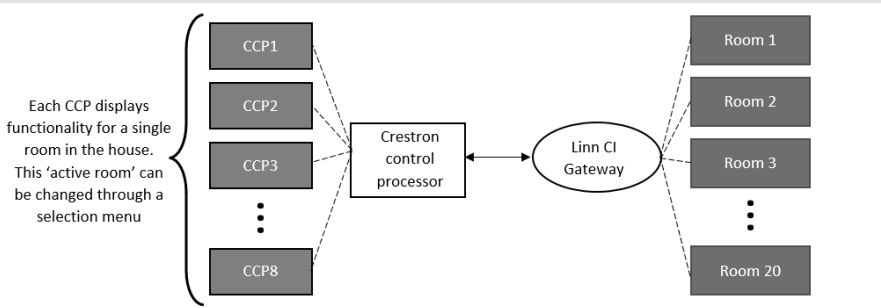
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VENDOR SETUP:	<p>The Linn devices should be installed and configured by a suitably qualified engineer, according to Linn documentation, prior to integration with this driver. Any subsequent changes to the configuration of the Linn devices may require additional re-configuration of the Crestron modules.</p> <p>This driver also requires the Linn CI Gateway software. This should be enabled through the system configuration of a Linn device that supports this feature. The current supporting products are Klimax DSM (2020 Variant), Kustom DSM, Majik DSM (2020 Variant), Selekt DSM, Selekt DSM Classic, Selekt DSM Edition, Series 3. The product running the gateway should be updated to at least firmware v 4.105.524</p> <p>Alternatively, an instance of Kazoo Server running on the network will also provide the CI Gateway. A minimum requirement for Kazoo Server is V4.1.31. Only one instance of the CI Gateway is required.</p>
CABLE DIAGRAM:	<p>Communicates via TCP-IP</p>  <p>Each CCP displays functionality for a single room in the house. This 'active room' can be changed through a selection menu</p> <p>A Crestron Control Point (CCP) can be a Crestron app running on an iPad or iPhone, a Crestron touch screen panel, or an XPanel instance</p> <p>A room can be a Linn DS/DSM, a Kustom DSM stream or a Kustom DSM zone</p>

The driver itself has two core constituent SIMPL modules/symbols that need to be incorporated in a SIMPL Windows project:

LinnDriver.umc

This module is the 'brain' of the driver that is responsible for establishing communication with the CI Gateway and managing information received from it to update Crestron Control Points (CCP) accordingly.

CONTROL:		
Driver_Toggle	D	Toggles the driver between being in a disabled or active state. Defaults to the enabled state on loading to the Crestron processor.
Driver_Refresh	D	If the driver is active, this will refresh the program. All known data about Linn devices and their states will be reset and the current CI Gateway session will



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		be closed and re-established.
MacroCommands	S	Used for sending LPEC commands directly to rooms within the house. For more information see setup guide document linked in general notes.

Signal Group: Rooms

This group provides information about the rooms within the house that is universal across all CCPs. These signals will be used in the room selection menu of every CCP.

Room[1-20]_Standby_Toggle	D	Directly toggle the standby state of the corresponding room.
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FEEDBACK:

DriverRegistered	D	On loading the program, the driver will register itself. If not high, then an error has occurred.
Driver_Status	D	Indicates the current active state of the driver. If active this will be high in value, else it will be low.
GatewayConnection_Status	D	Indicates the current state of the connection with the CI Gateway. If a connection is open this will be high in value, else it will be low.
NumberOfRooms	A	Once a connection to the CI Gateway is established this signal will output the number of rooms (more specifically, the number of lines required in a list of rooms within the house).

Signal Group: Rooms

This group provides information about the rooms within the house that is universal across all CCPs. These signals will be used in the room selection menu of every CCP.

Room[1-20]_Standby_Status	D	Standby states of the rooms in the current house setup. Note: Digital signal high for standby off (i.e., room turned on), low for standby on.
Room[1-20]_Standby_Visible	D	Visibility of the room standby buttons. In some cases, with the Kustom DSM, a standby button should not be visible.
Room[1-20]_Text	S	The text for the rooms in the current house setup. When devices are grouped, the names of the rooms are formatted with indentation and additional details to clearly show the arrangements.

PARAMETERS:

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GATEWAY_IP	S	Optional: By entering a valid IPv4 address into this field, the automatic discovery mechanism will be overridden, and this address will be used instead.
GATEWAY_PORT	S	Optional: By entering a valid port number (integer 1025-65536) into this field, the default gateway port number of 4100 will be overridden.
DEFAULT_SOURCE_IMAGE_PATH	S	Enter the local path for the image that will be used for sources that don't conform to any of the following types.
ANALOG_SOURCE_IMAGE_PATH	S	Enter the local path for the image that will be used for external sources of the analog type.
SPDIF_SOURCE_IMAGE_PATH	S	Enter the local path for the image that will be used for external sources of the SPDIF type.
TOSLINK_SOURCE_IMAGE_PATH	S	Enter the local path for the image that will be used for external sources of the TOSLINK type.
HDMI_SOURCE_IMAGE_PATH	S	Enter the local path for the image that will be used for external sources of the HDMI type.
LOGGING_ENABLED	A	Use to enable logging on the Crestron console for debugging purposes. 0d for disabled 1d for enabled.

LinnControlPoint.umc

This module provides all the unique input and output signals required per CCP. One of these modules must be added for each CCP used in the house setup. The signals contained in this module cover the core functionality of the driver.

CONTROL:

CP_Standby_Toggle	D	Toggle the standby state of the active room.
<u>Signal Group: Volume & Transport Control</u>		
This group contains signal relating to volume, mute, and transport control of the active room.		
CP_Mute_Toggle	D	Toggle the mute state of the active room.
CP_VolumeDec	D	Decrease the volume of the active room by 1. Held presses will cause the volume to ramp at a rate of 4/second.



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CP_VolumeInc	D	Increase the volume of the active room by 1. Held presses will cause the volume to ramp at a rate of 4/second.
CP_VolumeAbs	D	Sets the volume of the active room to an absolute value. Any time a change is made to this signal the room's volume will be set to that value.
CP_Shuffle_Toggle	D	Toggle the shuffle state of the active room.
CP_Repeat_Toggle	D	Toggle the repeat state of the active room.
CP_Play	D	Set the transport state of the active room to play.
CP_Pause	D	Set the transport state of the active room to pause.
CP_PlayPause_Toggle	D	Toggle the transport state of the active room between play and pause. Alternative to individual play and pause buttons.
CP_SkipPrev	D	Skip backward to the previous item in the playlist of the active room.
CP_SkipNext	D	Skip forward to the next item in the playlist of the active room.

Signal Group: Seeking, Metadata & Error

This group contains signals relating to the physical pin buttons on Linn devices and the metadata of the currently playing audio.

CP_MediaSeek	A	For relevant sources, move to a new position in the currently playing track. Use an integer value in the range 0-255, this will be mapped as a percentage.
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Signal Group: Pins

This group contains signals relating to the physical pin buttons on Linn devices and the metadata of the currently playing audio.

CP_Pins[1-6]	D	Select the corresponding pin for playback for the active room.
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Signal Group: Room & Source Selection

This group contains signals relating to the physical pin buttons on Linn devices and the metadata of the currently playing audio.

CP_RoomSelectByName	S	On every change to this string input a search will be done of the house for a room with a matching name. If found it will select it as the active room. If no room with a matching name is found, then a "Room Not Found" warning will display.
CP_Room[1-20]_Select	D	Select a room from the room list to become the new active room.
CP_Source[1-20]_Select	D	Select a source from the source list of the active room to become active.



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FEEDBACK:

CP_ControlPointRegistered	S	On loading the program, the control point will register itself. If not high, then an error has occurred.
CP_ControlPointId	S	The name of the control point as set through the CONTROL_POINT_NAME parameter.
CP_Header_Status	S	Primary information about the current state of the CCP. It will display text when searching for the CI Gateway connection or loading and give information about which room within the house topology is currently selected by the CCP.
CP_SubHeader_Status	S	Secondary information about the current state of the CCP. Used when a listening room is selected, the listening room's name will be output through this signal.
CP_Source_Status	S	The current source selected by the active room.
CP_NumberOfSources	A	Number of sources for the active room. Used by the source selection menu subpage to determine the number of items in the list.
CP_Standby_Status	D	Feedback for the standby state of the active room. Note: Digital signal high for standby off (i.e., room turned on), low for standby on.
CP_Standby_Available	D	Availability of the standby control button. For cases where no room is actively selected the standby button in the CCP should become unavailable.

Signal Group: Volume & Transport Control

This group contains signal relating to volume, mute, and transport control of the active room.

CP_Mute_Status	D	Feedback for the mute state of the active room.
CP_Volume_Status	S	The current volume level of the active room.
CP_Volume_Value	A	The current volume level of the active room as an integer.
CP_Shuffle_Status	D	Feedback for the shuffle state of the active room.
CP_Repeat_Status	D	Feedback for the repeat state of the active room.
CP_ShuffleRepeat_Available	D	Availability of the shuffle and repeat toggle buttons. For cases where these buttons are irrelevant to the actively selected room's source, these will



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		become unavailable in the CCP.
CP_Play_Status	D	Feedback for the play state of the active room.
CP_Pause_Status	D	Feedback for the pause state of the active room.
CP_PlayPause_Available	D	Availability of the play and pause buttons. For cases where these buttons are irrelevant to the actively selected room's source, these will become unavailable in the CCP.
CP_Skip_Available	D	Availability of the skip prev and skip next buttons. For cases where these buttons are irrelevant to the actively selected room's source, these will become unavailable in the CCP.

Signal Group: Seeking, Metadata & Error

This group contains signals relating to the physical pin buttons on Linn devices and the metadata of the currently playing audio.

CP_MediaProgress	A	Feedback for the progress of the currently playing track. Progress is mapped as an integer value between 0-255.
CP_TimeElapsed	S	The time elapsed for the currently playing item (uses format hh:mm:ss).
CP_TimeRemaining	S	The time remaining for the currently playing item (uses format hh:mm:ss).
CP_Metadata_Line1	S	The first line of metadata for the active room. Commonly, a track title, radio station name, or external source name.
CP_Metadata_Line2	S	The second line of metadata for the active room. Commonly, an artist's name or radio metatext.
CP_Metadata_Line3	S	The third line of metadata for the active room. Commonly an album name.
CP_Metadata_AudioFormat	S	The audio format for the active room.
CP_Metadata_SampleRate	S	The sample rate for the active room.
CP_Metadata_BitDepth	S	The bit depth for the active room.
CP_Metadata_ArtworkUri	S	The artwork URI for the active room.
CP_Metadata_Visible	D	Visibility of the metadata. Hides metadata during standby and loading processes.
CP_ErrorMessage	S	Info about the error that has occurred.



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CP_ErrorMessage_Visible	D	Used to hide the error message info when no error has occurred.
<u>Signal Group: Pins</u>		
This group contains signals relating to the room and source selection menus of the CCP.		
CP_Pin[1-6]_Available	D	Availability of the corresponding pin buttons. For cases when a pin is empty, loading or no room is currently selected, the pin will be unavailable.
CP_Pin[1-6]_Name	S	The name of the item the pin contains for the active room.
CP_Pin[1-6]_ArtworkUri	S	The artwork URI of the item the pin contains for the active room.
<u>Signal Group: Room & Source Selection</u>		
This group contains signals relating to the room and source selection menus of the CCP.		
CP_AnyRoomSelected	D	Indicate if any room is actively selected on the CCP. Digital high if so, low if not.
CP_Room[1-20]_Selected	D	Whichever room in the room list is currently active for the CCP will be shown in this set of digital outputs. Gives feedback for the room selection list by allowing it to highlight the active room.
CP_Source[1-20]_Selected	D	Whichever source is currently selected for the active room will be shown in this set of digital outputs. Gives feedback for the source selection list by allowing it to highlight the active source.
CP_Source[1-20]_Text	S	The names of the available sources for the active room. Used by the source selection list.

PARAMETERS:

CONTROL_POINT_NAME	S	A name that describes the control point (eg. Hallway TP, Living Room iPad). Must be unique from other control point module instances. Used for debugging purposes and for associating add-on modules.
DEVICE_LOCK	S	Optional: By entering a name (or UDN) of a device/room the control point will automatically select that room if it is present in the house. If no device lock is in use enter "none" as the parameter value.

LinnAirable.umc

This optional module provides all the unique input and output signals required per CCP for the browsing and searching of the Airable radio service. If you wish a CCP to possess these

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capabilities, then this SIMPL module should be added alongside the core LinnControlPoint module. The CONTROL_POINT_NAME parameter should then be set to match the LinnControlPoint module's corresponding parameter. The driver will then link them on start-up. The module's interface uses a structure that can be recreated using the full installation guide and the demo project for reference.

CONTROL:

Signal Group: Browse Page

This group contains signals relating to the browse page of the Airable module. This page allows you to browse for stations through categories provided by Airable.

CP_Browse	D	Perform a page flip to the Airable browse page.
CP_Browse_Containers[1-20]_Select	D	Select a container for browsing its contents.
CP_Browse_Return	D	Used in the 'filter' container. Returns to the previous level as you move through the filter navigation.
CP_Browse_PrevPage	D	Change to the previous page in the currently selected container.
CP_Browse_NextPage	D	Change to the next page in the currently selected container.
CP_Browse_List[1-20]_Select	D	Select an item within the active container for playback.
CP_Browse_List[1-20]_Action	D	Select an item within the active container as the active action item and perform a page flip to the Airable actions page.

Signal Group: Search Page

This group contains signals relating to the search page of the Airable module. This page allows a user to search for stations within Airable's catalogue.

CP_Search	D	Perform a page flip to the Airable search page.
CP_Search_TextEntry	S	Enter text for the search of the Airable service. Search is not begun until the digital signal below is made high.
CP_Search_New	D	Begin the search process using the string value entered in the string signal above.
CP_Search_Return	D	Used in the 'filter' functionality. Returns to the previous level as you move through the filter navigation.



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CP_Search_PrevPage	D	Change to the previous page in the active search.
CP_Search_NextPage	D	Change to the next page in the active search.
CP_Search_List[1-20]_Select	D	Select an item from the search results for further browsing or playback.
CP_Search_List[1-20]_Action	D	Select an item from the search results for use by the actions page.

Signal Group: Actions Page

This group contains signals relating to the actions page of the Airable module. This page allows a user to perform further actions with an Airable station.

CP_Actions_Return	D	Perform a page flip back to either the browse or search pages depending on the source of the active action item.
CP_Actions_PlayNow	D	Select the active action item for playback on the active room.
CP_Actions_Favourite_Toggle	D	Select the active action item for playback on the active room.
CP_Actions_SetToPin[1-6]	D	Set the active action item to a pin on the active room.

FEEDBACK:

CP_Module_Registered	D	On loading the program, the add-on module will register itself. If not high, then an error has occurred.
CP_Module_Linked	D	After registering, the add-on module will search for a control point to associate itself with. If this step fails, this signal will remain low and indicate an error has occurred. Ensure that the CONTROL_POINT_NAME parameters are identical and unique from other CCPs.
CP_Service_Available	D	Indicates if the airable service is available for the actively selected room on the CCP. Digital high if so, low if not. Should always be available if your Linn DS device is registered with a Linn account.
CP_ControlPointId	S	The name of the control point as set through the CONTROL_POINT_NAME parameter.

Signal Group: Browse Page

This group contains signals relating to the browse page of the Airable module. This page allows a user to browse for stations through categories provided by Airable.



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CP_Browse_PageFlip	D	Will momentarily go high on pressing the CP_Browse input to signal a page flip.
CP_Browse_NumberOfContainers	A	The number of containers found for the Airable service.
CP_Browse_Container[1-20]_Selected	D	Whichever container is currently selected will be shown in this set of digital outputs. Gives feedback for the container list by allowing it to highlight the active container.
CP_Browse_Container[1-20]_Name	S	Names of the available containers for the Airable service.
CP_Browse_Return_Available	D	Availability of the return button.
CP_Browse_Header	S	Used in the 'filter' container. Contains info about the navigation through this container.
CP_Browse_PrevPage_Available	D	Availability of the previous page button. For example, when on the first page the previous page button will be unavailable.
CP_Browse_NextPage_Available	D	Availability of the next page button. For example, when on the last page the next page button will be unavailable.
CP_Browse_PageInfo	S	Information about the current page for the active container. E.g., "Page 1 of 5".
CP_Browse_CurrentPage	A	The current page number for the active container.
CP_Browse_MaxPage	A	The maximum page number for the active container.
CP_Browse_PageSize	A	The number of items in the current page for the active Airable container.
CP_Browse_List[1-20]_Line1	S	The names of the items for the current page of the active Airable container.
CP_Browse_List[1-20]_Line2	S	The descriptions of the items for the current page of the active Airable container.
CP_Browse_List[1-20]_ArtworkUri	S	The artwork URIs of the items for the current page of the active Airable container.
CP_Browse_List[1-20]_Action_Visible	D	Visibility of the action buttons. Used to hide the action buttons for the By Location/Language/Genre filter items.

Signal Group: Search Page

This group contains signals relating to the search page of the Airable module. This page allows a user to search for stations



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within Airable's catalogue.

CP_Search_PageFlip	D	Will momentarily go high when a page flip to the search page is required.
CP_Search_Return_Available	D	Availability of the return button.
CP_Search_Header	S	Used in the 'filter' container. Contains info about the navigation through this container.
CP_Search_PrevPage_Available	D	Availability of the previous page button. For example, when on the first page the previous page button will be unavailable.
CP_Search_NextPage_Available	D	Availability of the next page button. For example, when on the last page the next page button will be unavailable.
CP_Search_PageInfo	S	Information about the current page for the active search. E.g., "Page 1 of 5".
CP_Search_CurrentPage	A	The current page number for the active container.
CP_Search_MaxPage	A	The maximum page number for the active container.
CP_Search_PageSize	A	The number of items in the active search result.
CP_Search_List[1-20]_Line1	S	The names of the items in the active search result.
CP_Search_List[1-20]_Line2	S	The descriptions of the items in the active search result.
CP_Search_List[1-20]_ArtworkUri	S	The artwork URIs of the items in the active search result.
CP_Search_List[1-20]_Action_Visible	D	Visibility of the action buttons. Used to hide the action buttons for the By Location/Language/Genre filter items.

Signal Group: Actions Page

This group contains signals relating to the actions page of the Airable module. This page allows a user to perform further actions with an Airable station.

CP_Actions_PageFlip	D	Will momentarily go high when a page flip to the actions page is required.
CP_Actions_Favourite_Status	D	The favourite status of the active action item.
CP_Actions_Line1	S	The name of the active action item.
CP_Actions_Line2	S	The description of the active action item.



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CP_Actions_ArtworkUri	S	The artwork URI of the active action item.
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PARAMETERS:

CONTROL_POINT_NAME	S	A name that matches the name of the associated control point module.
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LinnTidal.umd

This optional module provides all the unique input and output signals required per CCP for the browsing and searching of the Tidal streaming service. If you wish a CCP to possess these capabilities, then this SIMPL module should be added alongside the core LinnControlPoint module. The CONTROL_POINT_NAME parameter should then be set to match the LinnControlPoint module's corresponding parameter. The driver will then link them on start-up. The module's interface uses a structure that can be recreated using the full installation guide and the demo project for reference.

CONTROL:

Signal Group: Home Page

This group contains signals relating to the home page of the Tidal module. This page allows a user to open one of one of the top-level tabs for browsing provided by Tidal.

CP_Home	D	Perform a page flip to the TIDAL home page.
CP_WhatsNew	D	Select the "What's New" TIDAL tab as the active tab and perform a page flip to the browse page.
CP_WhatsNew	D	Select the "My Mixes" TIDAL tab as the active tab and perform a page flip to the browse page.
CP_TidalRising	D	Select the "TIDAL Rising" TIDAL tab as the active tab and perform a page flip to the browse page.
CP_Genres	D	Select the "Genres" TIDAL tab as the active tab and perform a page flip to the browse page.
CP_Moods	D	Select the "Moods" TIDAL tab as the active tab and perform a page flip to the browse page.
CP_MyTidal	D	Select the "My TIDAL" TIDAL tab as the active tab and perform a page flip to the browse page.



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CP_Search	D	Perform a page flip to the TIDAL search page.
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Signal Group: Browse Page

This group contains signals relating to the browse page of the Tidal module. This page allows a user to browse for media through categories provided by Tidal.

CP_Browse_ContainerReturn	D	Return to the main container list for the active tab. Used in the occasional case where a tab has sub-containers (in the TIDAL "Genres" tab for instance).
CP_Browse_Container[1-20]_Select	D	Select a container for browsing its contents.
CP_Browse_Active_ClearAndPlay	D	Clears the DS playlist and loads the contents of the active container for playback.
CP_Browse_Active_PlayLater	D	Load the contents of an active container for playback at the end of the DS playlist.
CP_Browse_Active_Action	D	Load the contents of an active container to the actions page and perform a page flip to the TIDAL actions page.
CP_Browse_PrevPage	D	Change to the previous page in the active container.
CP_Browse_NextPage	D	Change to the next page in the active container.
CP_Browse_List[1-20]_Item_Select	D	Select an item within the active container for playback.
CP_Browse_List[1-20]_Collection_Select	D	Load the contents of a collection within the active container to the collection page and perform a page flip to the TIDAL collection page.
CP_Browse_List[1-20]_Action	D	Select a list item/collection as the active action item and perform a page flip to the TIDAL actions page.

Signal Group: Search Page

This group contains signals relating to the search page of the Tidal module. This page allows a user to search for media from Tidal's catalogue.

CP_Search_TextEntry	S	Enter text for the search of the TIDAL service. Search is not begun until the digital signal below is made high.
CP_Search_New	D	Begin the search process using the string value entered in the string signal above.
CP_Search_Artists	D	Select artists as the active type of search results.



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CP_Search_Tracks	D	Select tracks as the active type of search results.
CP_Search_Albums	D	Select albums as the active type of search results.
CP_Search_Playlists	D	Select playlists as the active type of search results.
CP_Search_PrevPage	D	Change to the previous page in the active search.
CP_Search_NextPage	D	Change to the next page in the active search.
CP_Search_List[1-20]_Item_Select	D	Select an item within the active search for playback.
CP_Search_List[1-20]_Collection_Select	D	Load the contents of a collection within the active search to the collection page and perform a page flip to the TIDAL collection page.
CP_Search_List[1-20]_Action	D	Select a list item/collection as the active action item and perform a page flip to the TIDAL actions page.

Signal Group: Collection Page

This group contains signals relating to the collection page of the Tidal module. This page allows a user to browse the contents of a Tidal album or playlist.

CP_Collection_Return	D	Perform a page flip back to either the browse or search pages depending on the source of the active collection.
CP_Collection_Active_ClearAndPlay	D	Clears the DS playlist and loads the contents of the active collection for playback.
CP_Collection_Active_PlayLater	D	Load the contents of an active collection for playback at the end of the DS playlist.
CP_Collection_Active_Action	D	Load the active collection to the actions page and perform a page flip to the TIDAL actions page.
CP_Collection_PrevPage	D	Change to the previous page in the active collection.
CP_Collection_NextPage	D	Change to the next page in the active collection.
CP_Collection_Item[1-20]_Select	D	Select an item from the collection for playback.
CP_Collection_Item[1-20]_Action	D	Load an item from the collection to the actions page.

Signal Group: Actions Page

This group contains signals relating to the actions page of the Tidal module. This page allows a user to perform further actions



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with a Tidal media item (track/album/playlist).

CP_Actions_Return	D	Perform a page flip back to either the browse, search, or collection pages depending on the source of the active action item.
CP_Actions_ClearAndPlay	D	Clears the DS playlist and loads the active action item for playback.
CP_Actions_PlayNow	D	Load the active action item to the DS playlist and select for playback.
CP_Actions_PlayNext	D	Load the active action item after the currently playing track in the DS playlist.
CP_Actions_PlayLater	D	Load the active action item at the end of the DS playlist.
CP_Actions_Favourite_Toggle	D	Toggles the favourite status of the active action item.
CP_Actions_SetToPin[1-6]	D	Set the active action item to a pin on the active room.

FEEDBACK:

CP_Module_Registered	D	On loading the program, the add-on module will register itself. If not high, then an error has occurred.
CP_Module_Linked	D	After registering, the service module will search for a control point to associate itself with. If this step fails, this signal will remain low and indicate an error has occurred. Ensure that the CONTROL_POINT_NAME parameters are identical and unique from other CCPs.
CP_Service_Available	D	Indicates if the TIDAL service is available for the actively selected room on the CCP. Digital high if so, low if not
CP_ControlPointId	S	The name of the control point as set through the CONTROL_POINT_NAME parameter.

Signal Group: Home Page

This group contains signals relating to the home page of the Tidal module. This page allows a user to open one of one of the top-level tabs for browsing provided by Tidal.

CP_Home_PageFlip	D	Will momentarily go high when a page flip to the TIDAL home page is required.
CP_WhatsNew_Available	D	Availability of the "What's New" TIDAL tab for the active room.
CP_MyMixes_Available	D	Availability of the "My Mixes" TIDAL tab for the active room.



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CP_TidalRising_Available	D	Availability of the "TIDAL Rising" TIDAL tab is available for the actively selected room on the CCP.
CP_Genres_Available	D	Availability of the "Genres" TIDAL tab for the active room.
CP_Moods_Available	D	Availability of the "Moods" TIDAL tab for the active room.
CP_MyTidal_Available	D	Availability of the "My TIDAL" TIDAL tab for the active room.
Signal Group: Browse Page This group contains signals relating to the browse page of the Tidal module. This page allows a user to browse for media through categories provided by Tidal.		
CP_Browse_PageFlip	D	Will momentarily go high on pressing one of the tab inputs to signal a page flip.
CP_Browse_Active_Tab_Name	S	The name of the tab currently active on the browse page.
CP_Browse_ContainerReturn_Available	D	Availability of the container return button. Becomes unavailable when it is not relevant.
CP_Browse_Active_Container_Name	S	The name of the container currently active on the browse page.
CP_Browse_NumberOfContainers	A	The number of containers found for the active tab of the TIDAL service.
CP_Browse_Container[1-20]_Selected	D	The currently selected container will be shown in this set of digital outputs. Gives feedback for the container list by allowing it to highlight the active container.
CP_Browse_Container[1-20]_Name	S	Names of the available containers for the active tab of the service.
CP_Browse_Active_Actions_Available	D	Availability of the action buttons. Makes them unavailable when a container of collections is active.
CP_Browse_PrevPage_Available	D	Availability of the previous page button. For example, when on the first page the previous page button will be unavailable.
CP_Browse_NextPage_Available	D	Availability of the next page button. For example, when on the last page the next page button will be unavailable.
CP_Browse_PageInfo	S	Information about the current page for the active container. E.g., "Page 1 of 5".
CP_Browse_CurrentPage	A	The current page number for the active container.



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CP_Browse_MaxPage	A	The maximum page number for the active container.
CP_Browse_PageSize	A	The number of list items/collections on the current page for the active container.
CP_Browse_List_Items_Visible	D	Visibility of the list items. Will hide the buttons and labels when the active container contains collections.
CP_Browse_List[1-20]_Item_Line1	S	The track names of the items for the current page of the active container.
CP_Browse_List[1-20]_Item_Line2	S	The artist names of the items for the current page of the active container.
CP_Browse_List[1-20]_Item_Line3	S	The album names of the items for the current page of the active container.
CP_Browse_List_Collections_Visible	D	Visibility of the list collections. Will hide the buttons and labels when the active container contains items.
CP_Browse_List[1-20]_Collection_Line1	S	The album/playlist names of the collections for the current page of the active container.
CP_Browse_List[1-20]_Collection_Line2	S	The album artists or playlist descriptions of the collections for the current page of the active container.
CP_Browse_List[1-20]_ArtworkUri	S	The artwork URIs of the items/collections for the current page of the active container.

Signal Group: Search Page

This group contains signals relating to the search page of the Tidal module. This page allows a user to search for media from Tidal's catalogue.

CP_Search_PageFlip	D	Will momentarily go high when a page flip to the search page is required.
CP_Search_Artists_Selected	D	Feedback that the artist result type is the active search type.
CP_Search_Tracks_Selected	D	Feedback that the track result type is the active search type.
CP_Search_Albums_Selected	D	Feedback that the album result type is the active search type.
CP_Search_Playlists_Selected	D	Feedback that the playlist result type is the active search type.
CP_Search_Types_Available	D	Availability of the search result type buttons. Unavailable until a search is started.
CP_Search_PrevPage_Available	D	Availability of the previous page button. For example, when on the first page



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		the previous page button will be unavailable.
CP_Search_NextPage_Available	D	Availability of the next page button. For example, when on the last page the next page button will be unavailable.
CP_Search_PageInfo	S	Information about the current page for the active search. Eg. "Page 1 of 5".
CP_Search_CurrentPage	A	The current page number for the active search. Will display zero if no search is active.
CP_Search_MaxPage	A	The maximum page number for the active search. Will display zero if no search is active.
CP_Search_PageSize	A	The number of items on the current page for the active search.
CP_Search_List_Items_Visible	D	Visibility of the list items. Use to hide the items info/buttons when the active search contains collections.
CP_Search_List[1-20]_Item_Line1	S	The track names of the items for the current page of the active search.
CP_Search_List[1-20]_Item_Line2	S	The artist names of the items for the current page of the active search.
CP_Search_List[1-20]_Item_Line3	S	The album names of the items for the current page of the active search.
CP_Search_List[1-20]_Collections_Visible	D	Visibility of the list collections. Use to hide the collections info/buttons when the active search contains items.
CP_Search_List[1-20]_Collection_Line1	S	The album/playlist/artist names of the collections for the current page of the active search.
CP_Search_List[1-20]_Collection_Line2	S	The album artists or playlist descriptions of the collections for the current page of the active search.
CP_Search_List[1-20]_ArtworkUri	S	The artwork URIs of the items/collections for the current page of the active search.

Signal Group: Collection Page

This group contains signals relating to the collection page of the Tidal module. This page allows a user to browse the contents of a Tidal album or playlist.

CP_Collection_PageFlip	D	Will momentarily go high when a page flip to the Collection page is required.
CP_Collection_Active_Actions_Available	D	Availability of the action buttons.
CP_Collection_PrevPage_Available	D	Availability of the previous page button. For example, when on the first page



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		the previous page button will be unavailable.
CP_Collection_NextPage_Available	D	Availability of the next page button. For example, when on the last page the next page button will be unavailable.
CP_Collection_PageInfo	S	Information about the current page for the active collection. Eg. "Page 1 of 5".
CP_Collection_CurrentPage	A	The current page number for the active collection. Will display zero if no collection is active.
CP_Collection_MaxPage	A	The maximum page number for the active collection. Will display zero if no collection is loaded.
CP_Collection_PageSize	A	The number of items on the current page for the active collection.
CP_Collection_Line1	S	The album/playlist name of the active collection.
CP_Collection_Line2	S	The album artist or playlist description of the active collection.
CP_Collection_ArtworkUri	S	The artwork URI of the active collection.
CP_Collection_Item[1-20]_Line1	S	The track names of the items for the current page of the active collection.
CP_Collection_Item[1-20]_Line2	S	The artist names of the items for the current page of the active collection.
CP_Collection_Item[1-20]_Line3	S	The album names of the items for the current page of the active collection.
CP_Collection_Item[1-20]_ArtworkUri	S	The artwork URIs of the items/collections for the current page of the active collection.

Signal Group: Actions Page

This group contains signals relating to the actions page of the Tidal module. This page allows a user to perform further actions with a Tidal media item (track/album/playlist).

CP_Actions_PageFlip	D	Will momentarily go high on pressing the actions button for a TIDAL item/collection to signal a page flip.
CP_Actions_Favourite_Status	D	Favourite status of the active action item.
CP_Actions_Favourite_Available	D	Availability of the favourite button for the active action item. Some TIDAL items such as artists cannot be favourited.
CP_Actions_Line1	S	The name of the active action item.



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CP_Actions_Line2	S	The artist's name or playlist description of the active action item.
CP_Actions_Line3	S	The album name of the active action item.
CP_Actions_ArtworkUri	S	The artwork URI of the active action item.

PARAMETERS:

CONTROL_POINT_NAME	S	A name that matches the name of the associated control point module.
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LinnQobuz.umc

This optional module provides all the unique input and output signals required per CCP for the browsing and searching of the Qobuz streaming service. If you wish a CCP to possess these capabilities, then this SIMPL module should be added alongside the core LinnControlPoint module. The CONTROL_POINT_NAME parameter should then be set to match the LinnControlPoint module's corresponding parameter. The driver will then link them on start-up. The module's interface uses a structure that can be recreated using the full installation guide and the demo project for reference.

CONTROL:

Signal Group: Home Page

This group contains signals relating to the home page of the Qobuz module. This page allows a user to open one of one of the top-level tabs for browsing provided by Qobuz.

CP_Home	D	Perform a page flip to the Qobuz home page.
CP_Discover	D	Select the "Discover" Qobuz tab as the active tab and perform a page flip to the browse page.
CP_Genres	D	Select the "Genres" Qobuz tab as the active tab and perform a page flip to the browse page.
CP_MyQobuz	D	Select the "My Qobuz" Qobuz tab as the active tab and perform a page flip to the browse page.
CP_Search	D	Perform a page flip to the Qobuz search page.

Signal Group: Browse Page



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This group contains signals relating to the browse page of the Qobuz module. This page allows a user to browse for media through categories provided by Qobuz.

CP_Browse_ContainerReturn	D	Return to the main container list for the active tab. Used in the occasional case where a tab has sub-containers (in the Qobuz "Genres" tab for instance).
CP_Browse_Container[1-20]_Select	D	Select a container for browsing its contents.
CP_Browse_Active_ClearAndPlay	D	Clears the DS playlist and loads the contents of the active container for playback.
CP_Browse_Active_PlayLater	D	Load the contents of an active container for playback at the end of the DS playlist.
CP_Browse_Active_Action	D	Load the contents of an active container to the actions page and perform a page flip to the Qobuz actions page.
CP_Browse_PrevPage	D	Change to the previous page in the active container.
CP_Browse_NextPage	D	Change to the next page in the active container.
CP_Browse_List[1-20]_Item_Select	D	Select an item within the active container for playback.
CP_Browse_List[1-20]_Collection_Select	D	Load the contents of a collection within the active container to the collection page and perform a page flip to the Qobuz collection page.
CP_Browse_List[1-20]_Action	D	Select a list item/collection as the active action item and perform a page flip to the Qobuz actions page.

Signal Group: Search Page

This group contains signals relating to the search page of the Qobuz module. This page allows a user to search for media from Qobuz's catalogue.

CP_Search_TextEntry	S	Enter text for the search of the Qobuz service. Search is not begun until the digital signal below is made high.
CP_Search_New	D	Begin the search process using the string value entered in the string signal above.
CP_Search_Artists	D	Select artists as the active type of search results.
CP_Search_Tracks	D	Select tracks as the active type of search results.
CP_Search_Albums	D	Select albums as the active type of search results.



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CP_Search_Playlists	D	Select playlists as the active type of search results.
CP_Search_PrevPage	D	Change to the previous page in the active search.
CP_Search_NextPage	D	Change to the next page in the active search.
CP_Search_List[1-20]_Item_Select	D	Select an item within the active search for playback.
CP_Search_List[1-20]_Collection_Select	D	Load the contents of a collection within the active search to the collection page and perform a page flip to the Qobuz collection page.
CP_Search_List[1-20]_Action	D	Select a list item/collection as the active action item and perform a page flip to the Qobuz actions page.

Signal Group: Collection Page

This group contains signals relating to the collection page of the Qobuz module. This page allows a user to browse the contents of a Qobuz album or playlist.

CP_Collection_Return	D	Perform a page flip back to either the browse or search pages depending on the source of the active collection.
CP_Collection_Active_ClearAndPlay	D	Clears the DS playlist and loads the contents of the active collection for playback.
CP_Collection_Active_PlayLater	D	Load the contents of an active collection for playback at the end of the DS playlist.
CP_Collection_Active_Action	D	Load the active collection to the actions page and perform a page flip to the Qobuz actions page.
CP_Collection_PrevPage	D	Change to the previous page in the active collection.
CP_Collection_NextPage	D	Change to the next page in the active collection.
CP_Collection_Item[1-20]_Select	D	Select an item from the collection for playback.
CP_Collection_Item[1-20]_Action	D	Load an item from the collection to the actions page.

Signal Group: Actions Page

This group contains signals relating to the actions page of the Qobuz module. This page allows a user to perform further actions with a Qobuz media item (track/album/playlist).

CP_Actions_Return	D	Perform a page flip back to either the browse, search, or collection pages depending on the source of the active action item.
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CP_Actions_ClearAndPlay	D	Clears the DS playlist and loads the active action item for playback.
CP_Actions_PlayNow	D	Load the active action item to the DS playlist and select for playback.
CP_Actions_PlayNext	D	Load the active action item after the currently playing track in the DS playlist.
CP_Actions_PlayLater	D	Load the active action item at the end of the DS playlist.
CP_Actions_Favourite_Toggle	D	Toggles the favourite status of the active action item.
CP_Actions_SetToPin[1-6]	D	Set the active action item to a pin on the active room.

FEEDBACK:

CP_Module_Registered	D	On loading the program, the add-on module will register itself. If not high, then an error has occurred.
CP_Module_Linked	D	After registering, the service module will search for a control point to associate itself with. If this step fails, this signal will remain low and indicate an error has occurred. Ensure that the CONTROL_POINT_NAME parameters are identical and unique from other CCPs.
CP_Service_Available	D	Indicates if the Qobuz service is available for the actively selected room on the CCP. Digital high if so, low if not
CP_ControlPointId	S	The name of the control point as set through the CONTROL_POINT_NAME parameter.

Signal Group: Home Page

This group contains signals relating to the home page of the Qobuz module. This page allows a user to open one of one of the top-level tabs for browsing provided by Qobuz.

CP_Home_PageFlip	D	Will momentarily go high when a page flip to the Qobuz home page is required.
CP_Discover_Available	D	Availability of the "Discover" Qobuz tab for the active room.
CP_Genres_Available	D	Availability of the "Genres" Qobuz tab for the active room.
CP_MyQobuz_Available	D	Availability of the "My Qobuz" Qobuz tab for the active room.

Signal Group: Browse Page

This group contains signals relating to the browse page of the Qobuz module. This page allows a user to browse for media



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through categories provided by Qobuz.

CP_Browse_PageFlip	D	Will momentarily go high on pressing one of the tab inputs to signal a page flip.
CP_Browse_Active_Tab_Name	S	The name of the tab currently active on the browse page.
CP_Browse_ContainerReturn_Available	D	Availability of the container return button. Becomes unavailable when it is not relevant.
CP_Browse_Active_Container_Name	S	The name of the container currently active on the browse page.
CP_Browse_NumberOfContainers	A	The number of containers found for the active tab of the Qobuz service.
CP_Browse_Container[1-20]_Selected	D	The currently selected container will be shown in this set of digital outputs. Gives feedback for the container list by allowing it to highlight the active container.
CP_Browse_Container[1-20]_Name	S	Names of the available containers for the active tab of the service.
CP_Browse_Active_Actions_Available	D	Availability of the action buttons. Makes them unavailable when a container of collections is active.
CP_Browse_PrevPage_Available	D	Availability of the previous page button. For example, when on the first page the previous page button will be unavailable.
CP_Browse_NextPage_Available	D	Availability of the next page button. For example, when on the last page the next page button will be unavailable.
CP_Browse_PageInfo	S	Information about the current page for the active container. E.g., "Page 1 of 5".
CP_Browse_CurrentPage	A	The current page number for the active container.
CP_Browse_MaxPage	A	The maximum page number for the active container.
CP_Browse_PageSize	A	The number of list items/collections on the current page for the active container.
CP_Browse_List_Items_Visible	D	Visibility of the list items. Will hide the buttons and labels when the active container contains collections.
CP_Browse_List[1-20]_Item_Line1	S	The track names of the items for the current page of the active container.
CP_Browse_List[1-20]_Item_Line2	S	The artist names of the items for the current page of the active container.



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CP_Browse_List[1-20]_Item_Line3	S	The album names of the items for the current page of the active container.
CP_Browse_List_Collections_Visible	D	Visibility of the list collections. Will hide the buttons and labels when the active container contains items.
CP_Browse_List[1-20]_Collection_Line1	S	The album/playlist names of the collections for the current page of the active container.
CP_Browse_List[1-20]_Collection_Line2	S	The album artists or playlist descriptions of the collections for the current page of the active container.
CP_Browse_List[1-20]_ArtworkUri	S	The artwork URIs of the items/collections for the current page of the active container.

Signal Group: Search Page

This group contains signals relating to the search page of the Qobuz module. This page allows a user to search for media from Qobuz's catalogue.

CP_Search_PageFlip	D	Will momentarily go high when a page flip to the search page is required.
CP_Search_Artists_Selected	D	Feedback that the artist result type is the active search type.
CP_Search_Tracks_Selected	D	Feedback that the track result type is the active search type.
CP_Search_Albums_Selected	D	Feedback that the album result type is the active search type.
CP_Search_Playlists_Selected	D	Feedback that the playlist result type is the active search type.
CP_Search_Types_Available	D	Availability of the search result type buttons. Unavailable until a search is started.
CP_Search_PrevPage_Available	D	Availability of the previous page button. For example, when on the first page the previous page button will be unavailable.
CP_Search_NextPage_Available	D	Availability of the next page button. For example, when on the last page the next page button will be unavailable.
CP_Search_PageInfo	S	Information about the current page for the active search. Eg. "Page 1 of 5".
CP_Search_CurrentPage	A	The current page number for the active search. Will display zero if no search is active.
CP_Search_MaxPage	A	The maximum page number for the active search. Will display zero if no search is active.



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CP_Search_PageSize	A	The number of items on the current page for the active search.
CP_Search_List_Items_Visible	D	Visibility of the list items. Use to hide the items info/buttons when the active search contains collections.
CP_Search_List[1-20]_Item_Line1	S	The track names of the items for the current page of the active search.
CP_Search_List[1-20]_Item_Line2	S	The artist names of the items for the current page of the active search.
CP_Search_List[1-20]_Item_Line3	S	The album names of the items for the current page of the active search.
CP_Search_List[1-20]_Collections_Visible	D	Visibility of the list collections. Use to hide the collections info/buttons when the active search contains items.
CP_Search_List[1-20]_Collection_Line1	S	The album/playlist/artist names of the collections for the current page of the active search.
CP_Search_List[1-20]_Collection_Line2	S	The album artists or playlist descriptions of the collections for the current page of the active search.
CP_Search_List[1-20]_ArtworkUri	S	The artwork URIs of the items/collections for the current page of the active search.

Signal Group: Collection Page

This group contains signals relating to the collection page of the Qobuz module. This page allows a user to browse the contents of a Qobuz album or playlist.

CP_Collection_PageFlip	D	Will momentarily go high when a page flip to the Collection page is required.
CP_Collection_Active_Actions_Available	D	Availability of the action buttons.
CP_Collection_PrevPage_Available	D	Availability of the previous page button. For example, when on the first page the previous page button will be unavailable.
CP_Collection_NextPage_Available	D	Availability of the next page button. For example, when on the last page the next page button will be unavailable.
CP_Collection_PageInfo	S	Information about the current page for the active collection. Eg. "Page 1 of 5".
CP_Collection_CurrentPage	A	The current page number for the active collection. Will display zero if no collection is active.
CP_Collection_MaxPage	A	The maximum page number for the active collection. Will display zero if no collection is loaded.



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CP_Collection_PageSize	A	The number of items on the current page for the active collection.
CP_Collection_Line1	S	The album/playlist name of the active collection.
CP_Collection_Line2	S	The album artist or playlist description of the active collection.
CP_Collection_ArtworkUri	S	The artwork URI of the active collection.
CP_Collection_Item[1-20]_Line1	S	The track names of the items for the current page of the active collection.
CP_Collection_Item[1-20]_Line2	S	The artist names of the items for the current page of the active collection.
CP_Collection_Item[1-20]_Line3	S	The album names of the items for the current page of the active collection.
CP_Collection_Item[1-20]_ArtworkUri	S	The artwork URIs of the items/collections for the current page of the active collection.

Signal Group: Actions Page

This group contains signals relating to the actions page of the Qobuz module. This page allows a user to perform further actions with a Qobuz media item (track/album/playlist).

CP_Actions_PageFlip	D	Will momentarily go high on pressing the actions button for a Qobuz item/collection to signal a page flip.
CP_Actions_Favourite_Status	D	Favourite status of the active action item.
CP_Actions_Favourite_Available	D	Availability of the favourite button for the active action item. Some Qobuz items such as artists cannot be favourited.
CP_Actions_Line1	S	The name of the active action item.
CP_Actions_Line2	S	The artist's name or playlist description of the active action item.
CP_Actions_Line3	S	The album name of the active action item.
CP_Actions_ArtworkUri	S	The artwork URI of the active action item.

PARAMETERS:

CONTROL_POINT_NAME	S	A name that matches the name of the associated control point module.
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LinnPlaylist.umc

This optional module provides all the unique input and output signals required per CCP for the viewing and modifying of the DS playlist for the active room. If you wish a CCP to possess these capabilities, then this SIMPL module should be added alongside the core LinnControlPoint module. The CONTROL_POINT_NAME parameter should then be set to match the LinnControlPoint module's corresponding parameter. The driver will then link them on start-up. The module's interface uses a structure that can be recreated using the full installation guide and the demo project for reference.

CONTROL:

CP_Page	D	Perform a page flip to the playlist page.
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Signal Group: Playlist

This group contains signals relating to the playlist of the active room.

CP_PrevPage	D	Change to the previous page in the active room's playlist.
CP_NextPage	D	Change to the next page in the active room's playlist.
CP_DeleteAll	D	Clear all items from the active room's playlist.
CP_List[1-50]_Select	D	Select an item within the playlist for playback (i.e., move to a new position in the playlist). If editing is active this will be used to set the active edit item.
CP_List[1-50]_Favourite_Toggle	D	Toggle the favourite status of an item within the playlist.

Signal Group: Edit

This group contains signals relating to editing the playlist of the active room. When the edit state is active, a user can move or remove items from the playlist.

CP_Edit_Toggle	D	Used to toggle the edit state of the playlist page.
CP_MoveToTop	D	Move the playlist item selected for editing to the top of the playlist.
CP_MoveUp	D	Move the playlist item selected for editing one place up the playlist.
CP_MoveDown	D	Move the playlist item selected for editing one place down the playlist.
CP_MoveToEnd	D	Move the playlist item selected for editing to the end of the playlist.



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CP_Delete	D	Remove the playlist item selected for editing from the playlist.
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FEEDBACK:

CP_Module_Registered	D	On loading the program, the add-on module will register itself. If not high, then an error has occurred.
CP_Module_Linked	D	After registering, the service module will search for a control point to associate itself with. If this step fails, this signal will remain low and indicate an error has occurred. Ensure that the CONTROL_POINT_NAME parameters are identical and unique from other CCPs.
CP_ControlPointId	S	The name of the control point as set through the CONTROL_POINT_NAME parameter.
CP_PageFlip	D	Will momentarily go high on pressing the CP_Page input to signal a page flip.

Signal Group: Playlist

This group contains signals relating to the playlist of the active room.

CP_PrevPage_Available	D	Availability of the previous page button. For example, when on the first page the previous page button will be unavailable.
CP_NextPage_Available	D	Availability of the next page button. For example, when on the last page the next page button will be unavailable.
CP_PageInfo	S	Information about the current page for the active room's playlist. E.g., "Page 1 of 5".
CP_CurrentPage	A	The current page number for the active room's playlist.
CP_MaxPage	A	The maximum page number for the active room's playlist.
CP_PageSize	A	The number of items on the current page for the active room's playlist.
CP_List[1-50]_Selected	D	Whichever item is currently selected in the playlist will be shown in this set of digital outputs. Gives feedback for the playlist by allowing it to highlight the track currently selected.
CP_List[1-50]_Favourite_Status	D	Favourite status for the playlist items within the current page.
CP_List[1-50]_Favourite_Visible	D	Visibility of the favourite button. Tracks in the playlist from a local media server can't be favourited and the button will be hidden.



Manufacturer: Linn Product Ltd.

Model: DS/DSM

Device Type: Media Streamer

CP_List[1-50]_Line1	S	The track name for the playlist items within the current page.
CP_List[1-50]_Line2	S	The artist's name for the playlist items within the current page.
CP_List[1-50]_ArtworkUri	S	The artwork URI for the playlist items within the current page.

Signal Group: Edit

This group contains signals relating to editing the playlist of the active room. When the edit state is active, a user can move or remove items from the playlist.

CP_Edit_Active	D	Indicates whether the edit state is active.
CP_Edit_Selected_Any	D	Indicates whether an item has been selected for editing in the playlist. Used for the availability of the edit inputs.
CP_Edit[1-50]_Selected	D	Whichever item in the active playlist list is currently selected for editing will be shown in this set of digital outputs.

PARAMETERS:

CONTROL_POINT_NAME	S	A name that matches the name of the associated control point module.
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LinnGroups.umc

This optional module provides all the unique input and output signals required per CCP for making modifications to the groupings of rooms in the house. Making changes to volumes of room within the active group is also made easier. If you wish a CCP to possess these capabilities, then this SIMPL module should be added alongside the core LinnControlPoint module. The CONTROL_POINT_NAME parameter should then be set to match the LinnControlPoint module's corresponding parameter. The driver will then link them on start-up. The module's interface uses a structure that can be recreated using the full installation guide and the demo project for reference.

CONTROL:

CP_Page	D	Perform a page flip to the groups page.
CP_AvailableListener[1-20]_Toggle	D	Toggle the available listeners from being grouped with the active lead room.

Signal Group: Volume Page



Manufacturer: Linn Product Ltd.

Model: DS/DSM

Device Type: Media Streamer

This group contains signals relating to the volume page of the groups module. This page allows a user to view and modify the volume and mute states of rooms within the active group more easily.

CP_Volume_Page	D	Change to the previous page in the active room's playlist.
CP_Volume_Group_Mute_Toggle	D	Toggle the mute state of the entire group.
CP_Volume_Group_VolumeDec	D	Decrease the overall volume of the active room's group by 1. Held presses will cause the volume to ramp at a rate of 4/second.
CP_Volume_Group_VolumeInc	D	Increase the overall volume of the active room's group by 1. Held presses will cause the volume to ramp at a rate of 4/second.
CP_Volume_Group_VolumeAbs	A	Sets the overall volume of the active room's group to an absolute value. Any time a change is made to this signal the group's overall volume will be set to that value.
CP_Volume_Room[1-20]_Standby_Toggle	D	Toggle the standby state of the corresponding room within the group.
CP_Volume_Room[1-20]_Mute_Toggle	D	Toggle the mute state of the corresponding room within the group.
CP_Volume_Room[1-20]_VolumeDec	D	Decrease the volume of the room within the group by 1. Held presses will cause the volume to ramp at a rate of 4/second.
CP_Volume_Room[1-20]_VolumeInc	D	Increase the volume of the room within the group by 1. Held presses will cause the volume to ramp at a rate of 4/second.
CP_Volume_Room[1-20]_VolumeAbs	A	Sets the volume of the corresponding room within the group to an absolute value. Any time a change is made to this signal the room's volume will be set to that value.

FEEDBACK:

CP_Module_Registered	D	On loading the program, the add-on module will register itself. If not high, then an error has occurred.
CP_Module_Linked	D	After registering, the service module will search for a control point to associate itself with. If this step fails, this signal will remain low and indicate an error has occurred. Ensure that the CONTROL_POINT_NAME parameters are identical and unique from other CCPs.
CP_ControlPointId	S	The name of the control point as set through the CONTROL_POINT_NAME parameter.



Manufacturer: Linn Product Ltd.
 Model: DS/DSM
 Device Type: Media Streamer

CP_PageFlip	D	Will momentarily go high when a page flip to the groups page is required.
CP_ActiveRoomName	D	The name of the active lead room.
CP_NumberOfAvailableListeners	D	The number of possible listener rooms for the active lead room.
CP_AvailableListener[1-20]_Grouped	A	Feedback for the grouped status of the available listener (i.e., is it grouped with the active lead room?).
CP_AvailableListener[1-20]_RoomName	S	The names of the possible listener rooms.

Signal Group: Volume Page

This group contains signals relating to the volume page of the groups module. This page allows a user to view and modify the volume and mute states of rooms within the active group more easily.

CP_Volume_PageFlip	D	Will momentarily go high when a page flip to the groups volume page is required.
CP_Volume_Group_Size	A	Number of group members for the active lead room's group.
CP_Volume_Group_Mute_Status	D	Feedback for the mute state of the entire group.
CP_Volume_Group_Volume_Status	S	The current averaged volume for the entire group.
CP_Volume_Group_Volume_Value	A	The current averaged volume for the entire group as an integer.
CP_Volume_Room[1-20]_Standby_Status	D	Feedback for the standby state of the corresponding room within the group.
CP_Volume_Room[1-20]_Mute_Status	D	Feedback for the mute state of the corresponding room within the group.
CP_Volume_Room[1-20]_Volume_Status	S	The volume of the corresponding room within the group.
CP_Volume_Room[1-20]_Volume_Value	A	The volume of the corresponding room within the group as an integer.
CP_Volume_Room[1-20]_Name	S	The name of the corresponding room in the active lead room's group.

PARAMETERS:

CONTROL_POINT_NAME	S	A name that matches the name of the associated control point module.
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Manufacturer: Linn Product Ltd.
 Model: DS/DSM
 Device Type: Media Streamer

LinnAccountPlaylists.umc

This optional module provides all the unique input and output signals required per CCP for the browsing and modification of Linn account playlists. If you wish a CCP to possess these capabilities, then this SIMPL module should be added alongside the core LinnControlPoint module. The CONTROL_POINT_NAME parameter should then be set to match the LinnControlPoint module's corresponding parameter. The driver will then link them on start-up. The module's interface uses a structure that can be recreated using the full installation guide and the demo project for reference.

CONTROL:		
CP_SaveActiveRoomPlaylist_TextEntry	S	Text entry for entering a name that will be used when creating a new account playlist.
CP_SaveActiveRoomPlaylist	D	The current playlist of the active room is taken and used to create a new account playlist on the customers Linn account. The string from the above text entry input is used as the name for the new account playlist.
<u>Signal Group: Browse Page</u>		
This group contains signals relating to the browse page of the Linn account playlists module. This page allows a user to browse the playlists on an account.		
CP_Browse	D	Perform a page flip to the account playlists browse page.
CP_Browse_PrevPage	D	Change to the previous page of account playlists.
CP_Browse_NextPage	D	Change to the next page of account playlists.
CP_Browse_List[1-20]_Collection_Select	D	Load the contents of an account playlist to the collection page and perform a page flip to the account playlists collection page.
CP_Browse_List[1-20]_Action	D	Select an account playlist as the active action item and perform a page flip to the account playlists action page.
<u>Signal Group: Collection Page</u>		
This group contains signals relating to the collection page of the Linn account playlists module. This page allows a user to browse the contents of an account playlist.		
CP_Collection_Return	D	Perform a page flip back to the browse page.
CP_Collection_Active_ClearAndPlay	D	Clears the DS playlist and loads the contents of the active collection for playback.



Manufacturer: Linn Product Ltd.

Model: DS/DSM

Device Type: Media Streamer

CP_Collection_Active_PlayLater	D	Load the contents of an active collection for playback at the end of the DS playlist.
CP_Collection_Active_Action	D	Load the active collection to the actions page and perform a page flip to the account playlists actions page.
CP_Collection_PrevPage	D	Change to the previous page in the active collection.
CP_Collection_NextPage	D	Change to the next page in the active collection.
CP_Collection_Item[1-20]_Select	D	Select an item from the collection for playback.
CP_Collection_Item[1-20]_Action	D	Load an item from the collection to the actions page.

Signal Group: Actions Page

This group contains signals relating to the actions page of the Linn account playlists module. This page allows a user to perform further actions with an account playlist or playlist item.

CP_Actions_Return	D	Perform a page flip back to either the browse, search, or collection pages depending on the source of the active action item.
CP_Actions_ClearAndPlay	D	Clears the DS playlist and loads the active action item for playback.
CP_Actions_PlayNow	D	Load the active action item to the DS playlist and select for playback.
CP_Actions_PlayNext	D	Load the active action item after the currently playing track in the DS playlist.
CP_Actions_PlayLater	D	Load the active action item at the end of the DS playlist.
CP_Actions_Delete	D	For an account playlist collection as the active item, delete the playlist from the Linn account. For an item, remove that track from the account playlist.

FEEDBACK:

CP_Module_Registered	D	On loading the program, the add-on module will register itself. If not high, then an error has occurred.
CP_Module_Linked	D	After registering, the service module will search for a control point to associate itself with. If this step fails, this signal will remain low and indicate an error has occurred. Ensure that the CONTROL_POINT_NAME parameters are identical and unique from other CCPs.
CP_Service_Available	D	Used to indicate if the account playlists service is available for the actively



Manufacturer: Linn Product Ltd.

Model: DS/DSM

Device Type: Media Streamer

		selected room on the CCP. Digital high if so, low if not.
CP_ControlPointId	S	The name of the control point as set through the CONTROL_POINT_NAME parameter.

Signal Group: Browse Page

This group contains signals relating to the browse page of the Linn account playlists module. This page allows a user to browse the playlists on an account.

CP_Browse_PageFlip	D	Will momentarily go high on pressing the CP_Browse input to signal a page flip.
CP_Browse_PrevPage_Available	D	Availability of the previous page button. For example, when on the first page the previous page button will be unavailable.
CP_Browse_NextPage_Available	D	Availability of the next page button. For example, when on the last page the next page button will be unavailable.
CP_Browse_PageInfo	S	Information about the current page of account playlists. E.g., "Page 1 of 5".
CP_Browse_CurrentPage	A	The current page number of account playlists.
CP_Browse_MaxPage	A	The maximum page number of account playlists.
CP_Browse_PageSize	A	The number of list items/collections in the current page of account playlists.
CP_Browse_List[1-20]_Collection_Line1	S	The playlist names for the current page of account playlists.
CP_Browse_List[1-20]_Collection_Line2	S	The playlist descriptions for the current page of account playlists.
CP_Browse_List[1-20]_ArtworkUri	S	The artwork URIs of the playlists for the current page of the account playlists. Will show the artwork for the first track in the playlist.

Signal Group: Collection Page

This group contains signals relating to the collection page of the Linn account playlists module. This page allows a user to browse the contents of an account playlist.

CP_Collection_PageFlip	D	Will momentarily go high when a page flip to the Collection page is required.
CP_Collection_PrevPage_Available	D	Availability of the previous page button. For example, when on the first page the previous page button will be unavailable.
CP_Collection_NextPage_Available	D	Availability of the next page button. For example, when on the last page the next page button will be unavailable.



Manufacturer: Linn Product Ltd.

Model: DS/DSM

Device Type: Media Streamer

CP_Collection_PageInfo	S	Information about the current page for the active collection. Eg. "Page 1 of 5".
CP_Collection_CurrentPage	A	The current page number for the active collection. Will display zero if no collection is active.
CP_Collection_MaxPage	A	The maximum page number for the active collection. Will display zero if no collection is loaded.
CP_Collection_PageSize	A	The number of items for the current page of the active collection.
CP_Collection_Line1	S	The playlist name of the active collection.
CP_Collection_Line2	S	The playlist description of the active collection.
CP_Collection_ArtworkUri	S	The artwork URI of the active collection. Will show the album artwork for the first track in the account playlist.
CP_Collection_Item[1-20]_Line1	S	The track names of the items for the current page of the active collection.
CP_Collection_Item[1-20]_Line2	S	The artist names of the items for the current page of the active collection.
CP_Collection_Item[1-20]_Line3	S	The album names of the items for the current page of the active collection.
CP_Collection_Item[1-20]_ArtworkUri	S	The artwork URIs of the items for the current page of the active collection.

Signal Group: Actions Page

This group contains signals relating to the actions page of the Linn account playlists module. This page allows a user to perform further actions with an account playlist or playlist item.

CP_Actions_PageFlip	D	Will momentarily go high on pressing the actions button for an account playlist item/collection to signal a page flip.
CP_Actions_Line1	S	The name of the active action item.
CP_Actions_Line2	S	The artist's name or playlist description of the active action item.
CP_Actions_Line3	S	The album name of the active action item.
CP_Actions_ArtworkUri	S	The artwork URI of the active action item.

PARAMETERS:

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Manufacturer: Linn Product Ltd.

Model: DS/DSM

Device Type: Media Streamer

CONTROL_POINT_NAME	S	A name that matches the name of the associated control point module.
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LinnLocalServer.umc

This optional module provides all the unique input and output signals required per CCP for the browsing and modification of Linn account playlists. If you wish a CCP to possess these capabilities, then this SIMPL module should be added alongside the core LinnControlPoint module. The CONTROL_POINT_NAME parameter should then be set to match the LinnControlPoint module's corresponding parameter. The driver will then link them on start-up. The module's interface uses a structure that can be recreated using the full installation guide and the demo project for reference.

CONTROL:

Signal Group: Browse Page

This group contains signals relating to the browse page of the local server module. This page allows a user to browse the albums on the local media server.

CP_Browse	D	Perform a page flip to the local server browse page.
CP_Browse_PrevPage	D	Change to the previous page of albums.
CP_Browse_NextPage	D	Change to the next page of albums.
CP_Browse_List[1-20]_Collection_Select	D	Load the contents of an album to the collection page and perform a page flip to the local server collection page.
CP_Browse_List[1-20]_Action	D	Select an album as the active action item and perform a page flip to the local server action page.

Signal Group: Search Page

This group contains signals relating to the search page of the local server module. This page allows a user to search for media on the local media server.

CP_Search	D	Perform a page flip to the local server search page.
CP_Search_TextEntry	S	Enter text for the search of the local server. Search is not begun until the digital signal below is made high.
CP_Search_New	D	Begin the search process using the string value entered in the string signal above.



Manufacturer: Linn Product Ltd.

Model: DS/DSM

Device Type: Media Streamer

CP_Search_Artists	D	Select artists as the active type of search results.
CP_Search_Tracks	D	Select tracks as the active type of search results.
CP_Search_Albums	D	Select albums as the active type of search results.
CP_Search_Composers	D	Select composers as the active type of search results.
CP_Search_PrevPage	D	Change to the previous page in the active search.
CP_Search_NextPage	D	Change to the next page in the active search.
CP_Search_List[1-20]_Item_Select	D	Select an item within the active search for playback.
CP_Search_List[1-20]_Collection_Select	D	Load the contents of a collection within the active search to the collection page and perform a page flip to the local server collection page.
CP_Search_List[1-20]_Action	D	Select a list item/collection as the active action item and perform a page flip to the local server actions page.

Signal Group: Collection Page

This group contains signals relating to the collection page of the local server module. This page allows a user to browse the contents of an album/artist/composer on the local media server.

CP_Collection_Return	D	Perform a page flip back to the search page.
CP_Collection_Active_ClearAndPlay	D	Clears the DS playlist and loads the contents of the active collection for playback.
CP_Collection_Active_PlayLater	D	Load the contents of an active collection for playback at the end of the DS playlist.
CP_Collection_Active_Action	D	Load the active collection to the actions page and perform a page flip to the local server actions page.
CP_Collection_PrevPage	D	Change to the previous page in the active collection.
CP_Collection_NextPage	D	Change to the next page in the active collection.
CP_Collection_Item[1-20]_Select	D	Select an item from the collection for playback.
CP_Collection_Item[1-20]_Action	D	Load an item from the collection to the actions page.

Signal Group: Actions Page



Manufacturer: Linn Product Ltd.

Model: DS/DSM

Device Type: Media Streamer

This group contains signals relating to the actions page of the local server module. This page allows a user to perform further actions with a local media server item (track/album).

CP_Actions_Return	D	Perform a page flip back to either the search or collection pages depending on the source of the active action item.
CP_Actions_ClearAndPlay	D	Clears the DS playlist and loads the active action item for playback.
CP_Actions_PlayNow	D	Load the active action item to the DS playlist and select for playback.
CP_Actions_PlayNext	D	Load the active action item after the currently playing track in the DS playlist.
CP_Actions_PlayLater	D	Load the active action item at the end of the DS playlist.
CP_Actions_Favourite_Toggle	D	Toggles the favourite status of the active action item.
CP_Actions_SetToPin[1-6]	D	Set the active action item to a pin on the active room.

FEEDBACK:

CP_Module_Registered	D	On loading the program, the add-on module will register itself. If not high, then an error has occurred.
CP_Module_Linked	D	After registering, the service module will search for a control point to associate itself with. If this step fails, this signal will remain low and indicate an error has occurred. Ensure that the CONTROL_POINT_NAME parameters are identical and unique from other CCPs.
CP_Service_Available	D	Indicates if the local server service is available for the actively selected room on the CCP. Digital high if so, low if not.
CP_ControlPointId	S	The name of the control point as set through the CONTROL_POINT_NAME parameter.
CP_Server_Available	S	Indicates if a UPnP media server was found on the local network with a name matching the SERVER_NAME parameter. If low, ensure the server is running on the same network and the names match.
CP_Server_Name	S	The name of the target UPnP media server as set through the SERVER_NAME parameter.

Signal Group: Browse Page

This group contains signals relating to the browse page of the local server module. This page allows a user to browse the albums on the local media server.



Manufacturer: Linn Product Ltd.

Model: DS/DSM

Device Type: Media Streamer

CP_Browse_PageFlip	D	Will momentarily go high when a page flip to the browse page is required.
CP_Browse_PrevPage_Available	D	Availability of the previous page button. For example, when on the first page the previous page button will be unavailable.
CP_Browse_NextPage_Available	D	Availability of the next page button. For example, when on the last page the next page button will be unavailable.
CP_Browse_PageInfo	S	Information about the current page. E.g., "Page 1 of 5".
CP_Browse_CurrentPage	A	The current page number.
CP_Browse_MaxPage	A	The maximum page number.
CP_Browse_PageSize	A	The number of albums on the current page.
CP_Browse_List[1-20]_Collection_Line1	S	The names of the albums for the current page.
CP_Browse_List[1-20]_Collection_Line2	S	The album artists of the albums for the current page.
CP_Browse_List[1-20]_ArtworkUri	S	The artwork URIs of the albums for the current page.

Signal Group: Search Page

This group contains signals relating to the search page of the local server module. This page allows a user to search for media on the local media server.

CP_Search_PageFlip	D	Will momentarily go high when a page flip to the search page is required.
CP_Search_Artists_Selected	D	Feedback that the artist result type is the active search type.
CP_Search_Tracks_Selected	D	Feedback that the track result type is the active search type.
CP_Search_Albums_Selected	D	Feedback that the album result type is the active search type.
CP_Search_Composers_Selected	D	Feedback that the composer result type is the active search type.
CP_Search_Types_Available	D	Availability of the search result type buttons. Unavailable until a search is started.
CP_Search_PrevPage_Available	D	Availability of the previous page button. For example, when on the first page the previous page button will be unavailable.
CP_Search_NextPage_Available	D	Availability of the next page button. For example, when on the last page the next page button will be unavailable.



Manufacturer: Linn Product Ltd.
 Model: DS/DSM
 Device Type: Media Streamer

CP_Search_PageInfo	S	Information about the current page for the active search. Eg. "Page 1 of 5".
CP_Search_CurrentPage	A	The current page number for the active search. Will display zero if no search is active.
CP_Search_MaxPage	A	The maximum page number for the active search. Will display zero if no search is active.
CP_Search_PageSize	A	The number of items on the current page for the active search.
CP_Search_List_Items_Visible	D	Visibility of the list items. Use to hide the items info/buttons when the active search contains collections.
CP_Search_List[1-20]_Item_Line1	S	The track names of the items for the current page of the active search.
CP_Search_List[1-20]_Item_Line2	S	The artist names of the items for the current page of the active search.
CP_Search_List[1-20]_Item_Line3	S	The album names of the items for the current page of the active search.
CP_Search_List[1-20]_Collections_Visible	D	Visibility of the list collections. Use to hide the collections info/buttons when the active search contains items.
CP_Search_List[1-20]_Collection_Line1	S	The album/artist names of the collections for the current page of the active search.
CP_Search_List[1-20]_Collection_Line2	S	The album artists of the collections for the current page of the active search.
CP_Search_List[1-20]_ArtworkUri	S	The artwork URIs of the items/collections for the current page of the active search.

Signal Group: Collection Page

This group contains signals relating to the collection page of the local server module. This page allows a user to browse the contents of an album/artist/composer on the local media server.

CP_Collection_PageFlip	D	Will momentarily go high when a page flip to the collection page is required.
CP_Collection_Active_Actions_Available	D	Availability of the action buttons.
CP_Collection_PrevPage_Available	D	Availability of the previous page button. For example, when on the first page the previous page button will be unavailable.
CP_Collection_NextPage_Available	D	Availability of the next page button. For example, when on the last page the next page button will be unavailable.



Manufacturer: Linn Product Ltd.

Model: DS/DSM

Device Type: Media Streamer

CP_Collection_PageInfo	S	Information about the current page for the active collection. Eg. "Page 1 of 5".
CP_Collection_CurrentPage	A	The current page number for the active collection. Will display zero if no collection is active.
CP_Collection_MaxPage	A	The maximum page number for the active collection. Will display zero if no collection is loaded.
CP_Collection_PageSize	A	The number of items on the current page for the active collection.
CP_Collection_Line1	S	The album/playlist name of the active collection.
CP_Collection_Line2	S	The album artist or playlist description of the active collection.
CP_Collection_ArtworkUri	S	The artwork URI of the active collection.
CP_Collection_Item[1-20]_Line1	S	The track names of the items for the current page of the active collection.
CP_Collection_Item[1-20]_Line2	S	The artist names of the items for the current page of the active collection.
CP_Collection_Item[1-20]_Line3	S	The album names of the items for the current page of the active collection.
CP_Collection_Item[1-20]_ArtworkUri	S	The artwork URIs of the items/collections for the current page of the active collection.

Signal Group: Actions Page

This group contains signals relating to the actions page of the local server module. This page allows a user to perform further actions with a local media server item (track/album).

CP_Actions_PageFlip	D	Will momentarily go high on pressing the actions button for a local server item/collection to signal a page flip.
CP_Actions_Line1	S	The name of the active action item.
CP_Actions_Line2	S	The artist's name of the active action item.
CP_Actions_Line3	S	The album name of the active action item.
CP_Actions_ArtworkUri	S	The artwork URI of the active action item.



Manufacturer: Linn Product Ltd.

Model: DS/DSM

Device Type: Media Streamer

PARAMETERS:

CONTROL_POINT_NAME	S	A name that matches the name of the associated control point module.
LOCAL_SERVER_NAME	S	The name of the UPnP local media server that the module will use (e.g. "MinimServer[PC1358]", "Asset UPnP: PC1358", "Linn Kazoo Server [PC1358]", "Twonky Server at PC1358")

TESTING:

OPS USED FOR TESTING:	2.8003.00049.01
SIMPL WINDOWS USED FOR TESTING:	SIMPL Windows: 4.2500.04.00 SIMPL+: 4.06
DEVICE DB USED FOR TESTING:	200.295.001.00
CRES DB USED FOR TESTING:	200.30000.001.00
SYMBOL LIBRARY USED FOR TESTING:	Symlib.Tio 1186
SAMPLE PROGRAM:	CP4: Linn_Demo_CP4.smw
REVISION HISTORY:	V3.0.14