CRESTRON
HELP FILE DOCUMENT

Manufacturer: Linn Products Limited
Model: DS
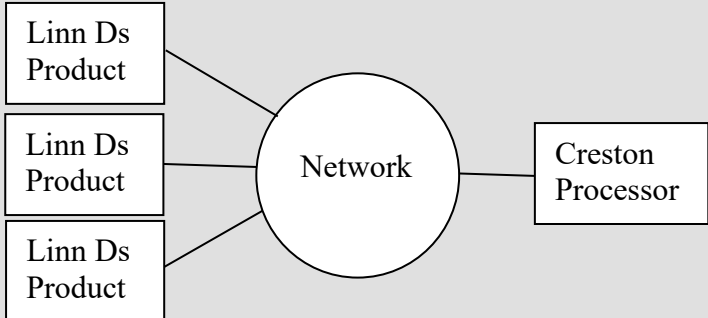Device Type: Media Streamer

CONTACT SUPPORT:

COMPANY NAME:	Linn Products Limited
SUPPORT CONTACT:	Linn Service Department
EMAIL ADDRESS:	service@linn.co.uk
PHONE:	UK Freephone: 0800 001 5111
	International: +44 141 307 7777

GENERAL INFORMATION

SIMPLWINDOWS NAME:	Linn_DS_Media_App_Demo_MC3
CATEGORY:	Miscellaneous
VERSION:	4.1.67
SUMMARY:	This driver has been designed to provide two-way control of Linn DS, DSM and pre-amplifier products, via TCP/IP. At the time of writing, the following models are supported: Klimax DS, Klimax DSM, KlimaxKontrol, Akurate DS, Akurate DSM, AkurateKontrol, Majik DS, Majik DS, Majik DS-I, MajikKontrol, Majik-I, Sneaky Music DS, Sneaky Music DSM, Sekrit DSM, Sekrit DS-I, Kinos, Kisto, RoomAmp2, Unidisk SC, Classik Movie, Classik Music.
	The package includes a demonstration file in smw format to aid with integration into a Crestron project. Additionally, touch panel designs have been created to mimic the Linn Kazoo application; these can be used for demonstration purposes, or directly integrated into your project.
GENERAL NOTES:	
CRESTRON HARDWARE REQUIRED:	Crestron Processor (Minimum Series 3)
SETUP OF CRESTRON HARDWARE:	Crestron Processor on the network and to connect to the Linn Equipment
VENDOR FIRMWARE:	This Crestron module will only work with Linn Kazoo server v4.7 and above.

Manufacturer: Linn Products Limited
Model: DS
Device Type: Media Streamer

VENDOR SETUP:	The Linn system 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 system may require additional re-configuration of the Crestron modules. Note also that all authentication information required by online music services should be configured in the Linn system and tested to confirm their accuracy.
CABLE DIAGRAM:	Controlled through TCP where the connection are handle internally in the module

Linn_DS_ControlBridge.umc

The Control Bridge module handles the initial discovery of the Linn players and manages which player is controlled by which Control Point module. Only one instance of the Control Bridge module is required in your program and once the signals are connected, no further configuration is required. Note that the Control bridge module can handle a maximum of 50 Control Point modules, and discovery begins 30 seconds after the program has loaded.

CONTROL:

TX		S	Signal FROM ControlPoint module
			Note:To discover the Linn gateway currently connected to Crestron, send Gateway –status to the 'ControlPoint_Rx' input.

FEEDBACK:

Manufacturer: Linn Products Limited
Model: DS
Device Type: Media Streamer

RX			
	S	Signal TO ControlPoint module	

Linn_DS ControlPoint_MediaPlayer_Aplication.umc

The Control point module handles all communication to and from the Linn players. One instance of the Control Point module is required for each Linn player in the system. As per the below example, each Control Point module must be linked with the Control Bridge module by connecting the ControlPoint_TX inputs in the Bridge module with the ControlPoint_TX output in each Control Point module. Additionally, the ControlPoint_RX outputs in the Bridge module must be linked to the ControlPoint_RX input in the Control Point modules.

CONTROL:

Signal Group: **CRCP**

CRCP		
		Carries CRPC data to the Media Player
EthernetAdaptorID		
		EthernetAdaptorID (default 0d)
CIP_Port		
		CIP_Port (default 41798d)

Signal Group: **Comms**

This group handles gateway communications.

ControlPoint_Rx	S	Signal FROM Control Bridge module
		Note: to force the Control Point on to a particular module you can send Gateway –connectTo <IP>:<PORT> to the 'ControlPoint_Rx' input.

Signal Group: **Select_Linn**

This group handles gateway selection

RoomSelect	S	Selects a room to control by name. If the Room text is incorrect, or the module hasn't discovered the requested player, 'Notification_Subpage' will be pulsed with a notification message
		If the selection fails, the module will remain on the previously selected Linn player

Signal Group: **Power**
This group controls Linn standby features.

RoomOff	D	Turns the current Linn device to Standby

Manufacturer: Linn Products Limited
Model: DS
Device Type: Media Streamer

RoomOn	D	Turns the current Linn device On
HouseOff	D	Turns all Linn devices to Standby

Signal Group: **Select_Sources**

This group is for control of the sources available for the currently selected Linn device. **Note:** It is important that sources that require login information are correctly configured. Failure to do so may lead to them being unavailable in to Crestron.

SourceSelect	S	Selects a source. If the source text is incorrect or the Linn device hasn't discovered the source, 'Notification_Subpage' will be pulsed with a notification message If the selection fails, the module will remain on the previous source
SelectTidal	D	Selects Tidal to browse
SelectQuobus	D	Selects Quobus to browse
SelectTuneIn	D	Selects TuneIn to browse
SelectUpnp	D	Selects Upnp to browse
SelectUpnpFavourite	D	Selects Upnp favourite to browse
SelectPlaylist	D	Selects a playlist to browse
SelectRadio	D	Selects Radio to browse

Signal Group: **Create_Upnp_Favourite**

This group allows a particular UPnP source to be designated as the favourite source.

Select_UPnP_1_As_Favourite to Select_UPnP_50_As_Favourite	D	Save A UPnP item as a favorite index by 'UPnP_1_Name to UPnP_50_Name'

Signal Group: **GroupVolume**

This group is responsible for management of group volume.

GroupVolumeUp	D	Increases the group volume
GroupVolumeDown	D	Decreases the group volume
GroupMuteOn	D	Enables mute for the group
GroupMuteOff	D	Disables mute for the group
GroupMuteToggle	D	Enables or disables mute for the group

Manufacturer: Linn Products Limited
Model: DS
Device Type: Media Streamer

Signal Group: **DeviceVolume**
This group is responsible for management of the currently selected device volume.

DeviceVolumeUp	D	Increases the device volume
DeviceVolumeDown	D	Decreases the device volume
DeviceMuteOn	D	Enables device volume mute
DeviceMuteOff	D	Disables device volume mute
DeviceMuteToggle	D	Enables or disables device volume mute

Signal Group: **Multiroom_Commands**
This signal group controls the addition and removal of devices to/from a group.

AddToGroup	D	Adds the 'Select_AvailableList_Item_[]' high signals to the current group
RemoveFromGroup	D	Removes the GroupList_[]_Selected high signals from the current group

Signal Group: **GroupList_Select**

These signals are for management of devices in a group

Select_GroupList_Item_1 to Select_GroupList_Item_50	D	Selects devices for removal from the group (pulse to toggle between selected and deselected)

Signal Group: **GroupList_Volume**
This group is responsible for the independent volume management of grouped devices.

GroupList_1_MuteToggle to GroupList_50_MuteToggle	D	Enables or disables mute for a grouped device (pulse to select and deselect)
GroupList_1_VolumeUp to GroupList_50_VolumeUp	D	Increases the volume of a grouped device
GroupList_1_VolumeDown to GroupList_50_VolumeDown	D	Decreases the volume of a grouped device

Signal Group: **AvailableRoom_Select**
These signals are for management of devices not currently grouped.

Select_AvailableList_Item_1 to Select_AvailableList_Item_50	D	Select devices for addition to a group (pulse to toggle between selected and deselected)

Signal Group: **Notification**
Handles information about the current state and user direction for the module.

Notification_Ok	D	Closes notification subpage

Manufacturer: Linn Products Limited
Model: DS
Device Type: Media Streamer

FEEDBACK:

Signal Group: CRCP

CRCP_FB	S	Carries CRPC data to the Touch Panel

Signal Group: **Comms**

This group handles gateway communications.

ControlPoint_Tx	S	Signal TO Control Bridge module

Signal Group: **Select_Linn**
This group handles gateway selection.

LinnDevices_IsAvailable	D	Value is 0 if no Linn devices are discovered
Current_Linn_Device	S	Name of currently selected Linn player
DeviceList_NumberOfItems	A	The number of Linn devices that have been discovered
DEVICE_NAME_1 to DEVICE_NAME_50	S	String Array[50] list of discovered names (Note that only names that fall into the range of 'DeviceList_NumberOfItems' are valid)

Signal Group: **Power**
This group controls Linn standby features.

RoomIsOn	D	Indicates if a Linn device is currently on

Signal Group: **Select_Sources**
This group is for control of the sources available for the currently selected Linn device.

SourceList_NumberOfItems	A	The number of Linn sources found for the current Linn device
Sources_IsAvailable	D	Value is 0 if no sources are discovered
CurrentSource	S	Name of the currently selected source
SelectTidalIsAvailable	D	Enable/disable the availability of Tidal
SelectQuobusIsAvailable	D	Enable/disable the availability of Quobus
SelectTuneInIsAvailable	D	Enable/disable the availability of TuneIn

Manufacturer: Linn Products Limited
Model: DS
Device Type: Media Streamer

SelectUpnpIsAvailable	D	Enable/disable the availability of Upnp
SelectUpnpFavouriteIsAvailable	D	Enable/disable the availability of UpnpFavourite
SelectPlaylistIsAvailable	D	Enable/disable the availability of Playlist
SelectRadioIsAvailable	D	Enable/disable the availability of Radio

Signal Group: **Sources_List**
This group details the available sources for the currently selected device.

SourceName1 to SourceName50	S	String Array[50] list of available sources for the current Linn device (note that only names that fall into the range of 'SourceList_NumberOfItems' are valid)

Signal Group: **Create_Upnp_Favourite**
This group allows a particular UPnP source to be designated as the favourite source.

Current_Favourite_UPnP	S	Currently selected Upnp favourite
UpnpList_IsAvailable	D	Value is 0 if no UPNP devices are discovered
UPnP_NumberOfItems	A	The number of My Music sources for currently selected device
UpnP_1_Name to UpnP_50_Name	S	String Array[50] list of available My Music Sources for currently selected device. Note that only Names that fall into the range of 'UpnP_NumberOfItems are valid.

Signal Group: **GroupVolume**
This group is responsible for management of group volume.

GroupCurrentVolume	A	Reports the current group volume level (0-100)
GroupMuteIsOn	D	Indicates if the group volume mute is on

Signal Group: **DeviceVolume**
This group is responsible for management of the currently selected device volume.

DeviceCurrentVolume	A	Reports the current device volume level (0-100)
DeviceMuteIsOn	D	Indicates if the device volume mute is on

Signal Group: **Now_Playing**
This group handles Now Playing metadata.

NowPlaying_CoverArtIsAvailable	D	Indicates the availability of cover art for the currently playing item
NowPlaying_CoverArt	S	Art Work for currently playing item

Manufacturer: Linn Products Limited
Model: DS
Device Type: Media Streamer

NowPlaying_MetaData1 to NowPlaying_MetaData6	S	The metadata fields for the currently playing item
NowPlaying_MetaText1 to NowPlaying_MetaText6	S	N/A
NowPlaying_CurrentProgress	A	Progress of the currently playing track (0-100)
NowPlaying_Time	A	Currently playing track total time
NowPlaying_Duration	A	Currently playing track current time

Signal Group: **Multiroom_Commands**
This signal group controls the addition and removal of devices to/from a group.

AddToGroupIsAvailable	D	Signal is high if any Select_AvailableList_Item_[] signals are currently high
RemoveFromGroupIsAvailable	D	Signal is high if any GroupList_[]_Selected signals are currently high
GroupingIsEditable	D	Signal is high if any Select_AvailableList_Item_[] signals or any GroupList_[]_Selected signals are currently high
GroupingIsLoading	D	Signal is high while grouping is taking effect on the Linn unit

Signal Group: **GroupList_Select**
These signals are for management of devices in a group

GroupList_1_Selected to GroupList_50_Selected	D	Feedback indicating devices to remove
GroupList_NumberOfItems	A	The number of devices in the group
GroupList_1_Name to GroupList_50_Name	S	A string array, containing the names of the devices in the group (note that only names that fall into the range of 'GroupList_NumberOfItems' are valid)

Signal Group: **GroupList_Volume**
This group is responsible for the independent volume management of grouped devices.

GroupList_1_CurrentVolume to GroupList_50_CurrentVolume	A	The current volume level of a grouped device

Signal Group: **AvailableRoom_Select**
These signals are for management of devices not currently grouped.

AvailableList_1_Selected to AvailableList_50_Selected	D	Feedback indicating devices to add
AvailableRoomLIst_IsAvailable	D	Value is 0 if no rooms are available
AvailableList_NumberOfItems	A	The number of devices not currently grouped

Manufacturer: Linn Products Limited
Model: DS
Device Type: Media Streamer

AvailableList_1_Name to AvailableList_50_Name	S	A string array, containing the names of the devices available for grouping (note that only names that fall into the range of 'GroupList_NumberOfItems' are valid)

Signal Group: **Notification**

Handles information about the current state and user direction for the module.

Notification_Title	S	Title of notification
Notification_Text	S	Text of notification
Notification_Subpage	D	High subpage appears, low subpage disappears

Signal Group: **Loading**

Handles loading information.

Loading_ShowSubpage	D	Signal is high when driver is loading entries

PARAMETERS: (anything needed to be assigned inside program)

GATEWAY IP	S	The IP address of the device
GATEWAY PORT	S	The port number used to communicate with the device
LINN DEVICE	S	The name of the device
LOCALE	S	The preferred language for the device

TESTING: (please fill out carefully)

OPS USED FOR TESTING:	Windows OS: Windows 10 Home (6.3)
SIMPL WINDOWS USED FOR TESTING:	SIMPL Windows: 4.11.05 SIMPL+ 4.04.01
DEVICE DB USED FOR TESTING:	Device Database: 101.05.001.00
CRES DB USED FOR TESTING:	Crestron Database(86)\Crestron\Cresdb\cnctrldb22000.mdb) : 73.02.001.00
SYMBOL LIBRARY USED FOR TESTING:	Symlib2.Tio 1081

Manufacturer: Linn Products Limited
Model: DS
Device Type: Media Streamer

SAMPLE PROGRAM:	Linn_DS_Demo_MC3
REVISION HISTORY:	4.1.67 added Kustom Modules