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Model: Net Remote
Device Type: Device Interface

GENERAL INFORMATION	
SIMPLWINDOWS NAME:	B&O Remote Driver
CATEGORY:	Device Interface
VERSION:	V 1.5.8
SUMMARY:	This module provides TCP/IP control of the following B&O devices: **Supported Audio Products:** BeoPlay M3 BeoPlay M5 BeoPlay A6 BeoPlay A9 MK2 BeoPlay A9 MK3 BeoPlay A9 MK4 BeoPlay A9 GVA BeoSound Essence MK2 BeoSound Core BeoSound Core IR BeoSound Moment BeoSound 1 BeoSound 2 BeoSound 1 Mk2 BeoSound 2 Mk2 BeoSound 1 GVA BeoSound 2 GVA BeoSound 35 BeoSound Shape BeoSound Edge BeoSound Stage **Supported Video Products:** BeoSystem 4 BeoPlay V1 32" BeoPlay V1 40" BeoVision 11 40" BeoVision 11 46" BeoVision 11 55" BeoVision Avant 55" BeoVision Avant 75"

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	BeoVision Avant 85"
	BeoVision Horizon 40"
	BeoVision Horizon 48"
	BeoVision 14 40"
	BeoVision 14 55"
	BeoVision Avant NG 55"
	BeoVision Avant NG 75"
	BeoVision Avant NG 85"
	BeoVision Eclipse 55"
	BeoVision Eclipse 65"
	BeoVision Eclipse 55" MK2
	BeoVision Eclipse 65" MK2
	BeoVision Eclipse 55" 3rd Gen
	BeoVision Eclipse 65" 3rd Gen
	BeoVision Harmony 65"
	BeoVision Harmony 77"
	BeoVision Harmony 83"
	BeoVision Harmony 88"
	BeoVision Harmony 97"
	BeoVision Contour 48"
	BeoVision Contour 55"
	Supported Link Products:
	BeoLink Converter NL/ML
	Supported Speaker Products:
	BeoLab 50
	BeoLab 90
GENERAL NOTES:	The module provides a remote interface via TCP/IP for a B&O device. Controls are provided for power, audio, input selection, borrowed sources and transport commands. Note for older TV's only: (**Not needed on Stage, Contour, Eclipse, Harmony or Audio Products**) To Keep the network port always online for older TV products you must setup the Quick Start Timers on the TV. If this is not done "Wake on LAN" will need to be used to turn on the TV from standby (Reduces power consumption, but adds 25 sec to startup from deep sleep, before a source can be selected) For simplicity it's recommended to just configure the "Quick Start Timers" on the TV so the TV will turn on with a regular source selection and no "Wake On LAN" functionality is then needed. The setting can be found by pressing "Menu" and selecting Setup -> Power Saving -> Standby -> Quick Start Timers Recommend setting would be:

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	TIMER 1: 00:01 to 23:59 MO TU WE TH FR SA SU TIMER 2: 23:59 to 00:01 MO TU WE TH FR SA SU If you choose to let the TV go to deep sleep mode and will be using WOL for powering up, it has to be enabled in the TV. MENU->SETUP->POWER SAVING -> NETWORK The driver module supports WOL directly in the module, but you will need to enter the MAC address of either the cabled or wireless network interface in order to use it. Once the WOL package has been sent it takes approximately 20-25 seconds until the TV is ready to accept connections. (This is only needed on the older TV's and only if Quick start timers are not configured)
CRESTRON HARDWARE REQUIRED:	2/3/4-series processor
SETUP OF CRESTRON HARDWARE:	Connect the Crestron processor on the same subnet as the B&O device.
VENDOR FIRMWARE:	N/A
VENDOR SETUP:	Connect the B&O device on the same subnet as the Crestron processor.
CABLE DIAGRAM:	Standard CAT5 cable.

CONTROL:

Connect	D	When high it attempts to connect to the products IP address. When using with Audio products or TV's with Quick Start Timers enabled it can be held high all the time. On older TV's, if no Quick Start Timers are configured and using WOL to turn on a TV, enable the module only when the TV is not in deep sleep to avoid Crestron error log filling up with "Can't connect to product messages".
Standby	D	Pulse to trigger the standby command.
All_Standby	D	Pulse to trigger a B&O system wide standby
Soft_Standby	D	Pulse to trigger soft standby (BeoLab 90 & BeoLab 50)
MyButton_SnapShot_[1-3]	D	Press: Activate PROFILE [1-3] on the TV. Hold: Store the current settings of the TV to PROFILE [1-3].
Store_MyButton_SnapShot	S	Direct Serial input for storing presets on MyButtons. For BV 11 use format: 1 For BV Harmony use format: button-mybutton-1

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Activate_MyButton_SnapShot	S	Direct Serial input for activating presets on MyButtons. For BV 11 use format: 1 For BV Harmony use format: button-mybutton-1
Input_[1-25]	D	Selects the input that has been setup in the parameters corresponding to the same number.
Source	S	Direct Select source, few valid examples shown (Brackets need to be included) "HDMI","connector":2 "MATRIX","connector":16 "HDMI","connector": 101 "HDMI","connector": 103 "GC4A" "WEB_BROWSER" "MUSIC_PLAYER" "GALLERY" "AMAZON_PRIME_VIDEO" "BBC_IPLAYER" "BLOCKBUSTER" "GOOGLE_PLAY_MOVIES_TV" "HULU_PLUS" "NETFLIX" "PLEX" "SF_ANYTIME" "TV_2_PLAY" "VIAPLAY" "VUDU"
Join	D	Joins an existing experience ongoing on another Bang & Olufsen product connected to the LAN. If several experiences are ongoing, it will toggle in between each experience.
NetworkProduct_1_Name	S	The network friendly name of Product 1 from which to borrow the sources [Not used, if defined in the parameters instead.]
NetworkProduct_1_Source	S	Select borrowed source by source type, i.e. "DEEZER" (Brackets need to be included) [Not used, if defined in the parameters instead.]
NetworkProduct1_Input [1-10]	D	Selects the borrowed source that has been setup in the parameters corresponding to the same number.
NetworkProduct_2_Name	S	The network friendly name of Product 2 from which to borrow the sources [Not used, if defined in the parameters instead.]

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NetworkProduct_2_Source	S	Select borrowed source by source type, i.e. "DEEZER" (Brackets need to be included) [Not used, if defined in the parameters instead.]
NetworkProduct2_Input [1-10]	D	Selects the borrowed source that has been setup in the parameters corresponding to the same number.
Mute_[On/Off]	D	Mute/Unmute the mute state..
Volume Up/Down	D	Pulse to increase/lower the volume.
Volume%	A	Set volume level. Range: 0..65535.
Volume_0-90	A	Set volume level. Range: 0-90.
Speaker	D	Open the "Speaker Group" menu.
Sound_Mode	D	Open the "Sound Mode" menu.
Narrow	D	Selects the "Narrow" Sound mode.
Wide	D	Selects the "Wide" Sound mode.
Omni	D	Selects the "Omni" Sound mode.
Activate_Speaker_Group	S	Selects speaker Group by ID (Send 1 to select speaker group 1)
Activate_Speaker_Mode	S	Selects speaker Mode by ID (Send 1 to select speaker mode 1)
Activate_Speaker_Preset	S	Selects Speaker Presets by ID (Send 01 to select Preset 1)
Picture_Format	D	Open the "Picture Format" menu.
Picture_Mode	D	Open the "Picture Mode" menu.
Picture_Size	D	Toggle the Picture Size while in P-in-P.
Picture_Mute	D	Mute the picture with electronic curtains.
Picture_UnMute	D	Unmute the picture with electronic curtains.
Format_2D	D	Change to 2D viewing mode.
Format_3D	D	Change to 3D viewing mode.
Activate_Picture_Mode	S	Selects Picture Mode by ID (Send 1 to select picture mode 1)
Digit_[0-9]	D	Send digit command 0..9.

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Menu	D	Open TV menu.
Text	D	Open teletext (if available on TV tuner source)
Cursor_[Up/Down/Left/Right]	D	Navigate [Up/Down/Left/Right].
Select	D	Navigate select.
Exit	D	Exit Menu.
Guide	D	Open TV guide.
Info	D	Show broadcast information.
Back	D	Navigate back one step.
Clear	D	Show broadcast information.
PageUp	D	Scrolls up by a page height (If supported by application).
PageDown	D	Scrolls down by a page height (If supported by application).
Home_Control_Menu	D	Opens the Home Control Menu on the TV (Lights/Shades/Climate/Cameras….)
Step_Up	D	Channel Up / Next Chapter.
Step_Down	D	Channel Down / Prev Chapter.
Red/Green/Yellow/Blue	D	Red/Green/Yellow/Blue button.
Play	D	Play command.
Pause	D	Pause Command
Stop	D	Stop Command
Rewind	D	Rewind command.
Fast_Forward	D	Fast Forward command.
Next	D	Next Track/Station
Prev	D	Previous Track/Station
Record	D	Start Recording (If supported by TV).
Random	D	Randomize content.

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Repeat	D	Repeat content.
Sleep_Timer	D	Toggle sleep timer.
Stand	D	Open the "Stand Positions" menu.
Stand_[Up/Down]	D	Hold to tilt TV upwards/downwards (if supported).
Stand_[Left/Right]	D	Hold to turn TV left/right (if supported).
Stand_[Red/Green/Yellow/Blue]	D	Hold to do secondary functions related to stand (see "Stand Positions" menu if supported).
Activate_Stand_Position	S	Selects stand location by ID (Send 1 to select stand location 1)
Keyboard_Done	D	Direct press "Done/Enter" (If supported by application).
Keyboard_Backspace	D	Direct press "Backspace" (If supported by application).
Keyboard_Clear	D	Direct press "Clear" (If supported by application).
Keyboard_Home	D	Direct press "Home" (If supported by application).
Keyboard_End	D	Direct press "End" (If supported by application).
Keyboard_Previous_Field	D	Selects the previous text field (If supported by application).
Keyboard_Previous_Field	D	Selects the next text field (If supported by application).
Keyboard_Page Up	D	Scrolls up by a page height (If supported by application).
Keyboard_Page_Down	D	Scrolls down by a page height (If supported by application).
Keyboard_Command	S	Send either a single or a series of characters when cursor is in a text input field (If supported by application).
Send_WOL	D	Send a Wake-On-LAN magic package to wake up the product if in deep sleep. After 20-25 seconds the product is ready to accept connections. If the product is in Quick Start Mode then it is not required to use this input. NOTE: Requires that MAC address of the LAN interface has been filled out in order to work.

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FEEDBACK:		
Connected_FB	D	Once the driver module is connected to the product this output will remain active.
Standby_FB	D	Indicates when the product is in Standby
MyButton_SnapShot_[1-3]_FB	D	Feedback pulses high when PROFILE [1-3] has been stored.
Input_Is_[1-25]	D	Goes high when Source [1..25] is selected.
Friendly_Source_Fb	S	The Friendly name of the currently selected source
Friendly_Product_Fb	S	The Friendly name of the product in which the source is played from
Mute_Is_[On/Off]	D	Product is [Muted/Unmuted].
Volume_Fb%	A	Current volume level of the product. Range: 0..65535
Volume_0-90_Fb	A	Current volume level of the product. Range: 0..90
Track_FB	S	Track number of the currently playing song (If supported by source)
Track_Name_FB	S	Track name of the currently playing song (If supported by source)
Track_Image_URL_FB	S	Track Image URL of the currently playing song (If supported by source)
Artist_FB	S	Artist name of the currently playing song (If supported by source)
Artist_Image_URL_FB	S	URL for the artist image (If supported by source)
Album_FB	S	Album name of the currently playing song (If supported by source)
Album_Image_URL_FB	S	URL for the album image (If supported by source)
Playing_Status_FB	S	Displays the playback state of the source (play, pause, stop)
Genre_FB	S	Genre of the currently playing song (If supported by source)
Net_Radio_Name_FB	S	Station name of the currently playing radio station (If supported by source)
Net_Radio_Genre_FB	S	Genre of the currently playing radio station (If supported by source)
Net_Radio_Country_FB	S	Country of the currently playing radio station (If supported by source)

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Net_Radio_Language_FB	S	Language of the currently playing radio station (If supported by source)
Net_Radio_Image_URL_FB	S	Channel logo URL of the currently playing radio station (If supported by source)
Net_Radio_Description_FB	S	Description of the currently playing radio station (If supported by source)
Video_Name_FB	S	The name of the currently playing video on HOMEMEDIA (If supported by source)
CH_Number_FB	S	The number of the RADIO station or TV CHANNEL viewed (If supported by source)
CH_Name_FB	S	The name of the RADIO station or TV CHANNEL viewed (If supported by source)
Light_FB	S	Light feedback from product as buttons are pressed on B&O remote, including support for press and hold (If supported by source)
Control_FB	S	Control feedback from product as buttons are pressed on B&O remote, including support for press and hold (If supported by source)

PARAMETERS:

IP_Address	S	The IP address of the product to control Note: For BeoVision Eclipse & BeoVision Harmony make sure to use the IP address of the Sound Center, not the OLED display.
Mac_Address	S	The MAC address of the network interface that should receive the Wake-On-LAN magic package. [OPTIONAL]
Source[1-25]	S	Setup which source to correspond to which number of input. It does not have to match the order in which it is listed in the TV source list.
Default Network Product 1 Name	S	The network name of the product, from which to borrow the below sources from. Can be configured in the products configuration menu.
NetworkProduct1Source[1-10]	S	Setup which sources to borrow from product 1
Default Network Product 2 Name	S	The network name of the product, from which to borrow the below sources from. Can be configured in the products configuration menu.
NetworkProduct2Source[1-10]	S	Setup which sources to borrow from product 2

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TESTING:	
OPS USED FOR TESTING:	V1.010.0060
SIMPL WINDOWS USED FOR TESTING:	V 4.02.56
DEVICE DB USED FOR TESTING:	V 63.00.002.00
CRES DB USED FOR TESTING:	V 49.06.005.00
SYMBOL LIBRARY USED FOR TESTING:	927
SAMPLE PROGRAM:	B&O Remote Driver v1.1 MC3 Demo
REVISION HISTORY:	v1.0 – Initial Release v1.1: - Fixed bug with the source type selection parameter for an input. - Added join input in the Sources signal group. - Removed Input_[1-25]_Name and Input_[1-25]_is_Used from the feedback section in the help file. v.1.5: - Added support for borrowed sources from other B&O products - Added support for audio products and BeoLink Multiroom - Added metadata, cover art and station logo support for the sources that support it - Fixed bug that would cause the module not to select a source when selected repeatedly without selecting another source first. - Added new sources to the module - Removed the need to enter the type, item and serial number of each product. Now it is only the IP address needed if using the module only for stand-alone product. If using borrowed sources the network friendly name of the products in which the sources are borrowed from is required. - Built-in Wake-On-LAN in the module if the product is in deep sleep, then it is now possible to wake it and after 20-25 seconds the product will be ready to accept connection from the driver module. If the TV is kept in Quick Start mode this is not applicable. - Various bug fixes and improvements V1.5.5: - Added Home Control Menu - Added direct Stand pos, speaker group, picture mode and sound mode control - Added BeoLab 90 BeamWith control support - Added Source feedback from "Borrowed Sources" - Added Source DVB_Radio - Added Track Image URL feedback V1.5.6: - Added additional Sources for BeoVision Eclipse - Updated Narrow/Wide/Omni commands for BeoLab 50/90 - Added Light and Control feedback* *Introduced in SW 2.1.23955 for Eclipse and Harmony *Introduced in SW 1.19.xxxxx for A6, A9 MKII, Essence MKII and BeoSound 35

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*Introduced in SW 1.19.xxxxx for BeoSound 1, BeoSound 2 and M5
*Introduced in SW 1.14.xxxxx for A9 MKIII, Core, Shape, M3, Edge BeoSound 1 GVA and BeoSound 2 GVA

V1.5.7:
- Added serial input for Speaker Preset selection
- Added Soft Standby for BeoLab 90 and BeoLab 50
- Updated Light & Control feedback parsing for new protocol

V1.5.8:
- Added Optical source input for BeoSound Core
- Added direct serial input for storing/activating MyButtons/Snapshots