



CHASSIS DRIVER INTEGRATION BULLETIN

Product	NAD Audio/Video Receivers and Integrated Amplifiers	Reference No.	CDIB-AVRIR2022-02
Subject	NAD Universal AVR IP Driver for Crestron Customer	Date	19 October 2022

DESCRIPTION	Provide the common functionality required to integrate NAD's AVR and integrated amplifiers into custom Crestron (SIMPL Windows) programs.
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INTRODUCTION

Ultamation's NAD IP control module for Crestron control systems, provides the common functionality required to integrate NAD's AVR and integrated amplifiers into custom Crestron (SIMPL Windows) programs.

This guideline provides the essential information for integration between NAD device and a Crestron control processor, and information on programming the module, with a host Crestron program.

This module is compatible with 3- and 4-Series Crestron systems ONLY and has been tested against the NAD T778. The NAD control protocol is mature and consistent across a wide variety of devices.

Applicable NAD Devices: T778, T758V3, M17, M17V2

NOTE

This driver is created by Ultamation Ltd on behalf of NAD. Support will be provided through Ultamation Ltd

<https://www.ultamation.com>

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INSTALLATION NOTES

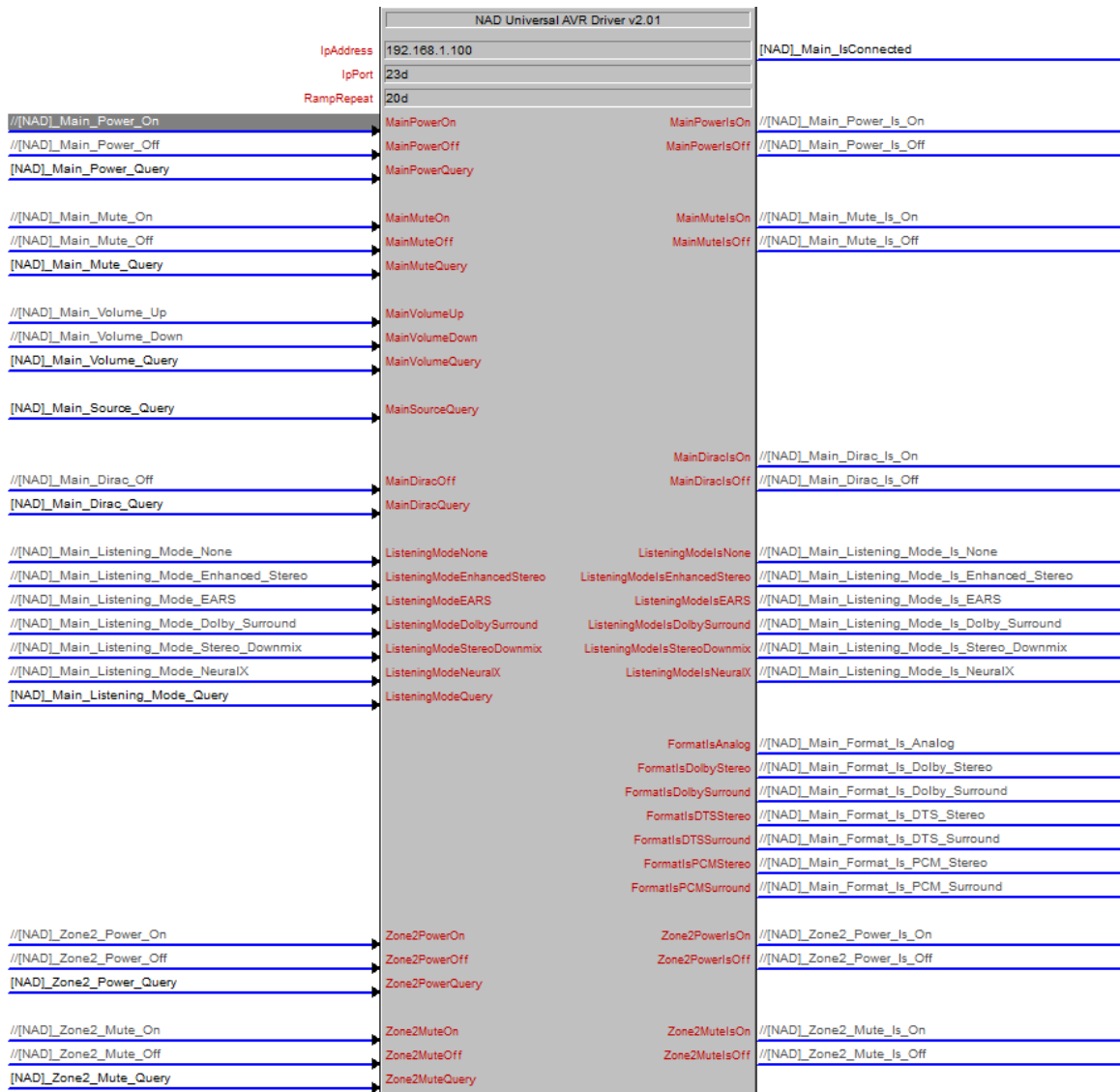
The Crestron system communicates with the NAD AVR/Amplifier directly via an IP connection. The NAD device must be set to a static IP address and the unit must be set to Control Setup -> CEC/LAN/BluOS in Standby to "ON" so that control can be maintained even when the unit is in standby.



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If you have multiple NAD devices, you must use a separate instance of the module for each device.

IPAddress - Enter the IP address of the NAD device to be controlled



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IPPort - Enter the IP port for control of the device (the default is 23)

RampRepeat - The time, in hundredths of seconds between volume raise/lower commands when the VolumeUp/Down signals are held.

PROGRAMMING NOTES

Each of the module files (see below) should be placed either in the host program's project folder, or to make the NAD module available to all Crestron programs, in the SIMPL Windows installation's User SIMPL+ (for .usp, .ush and .clz files) directories. This pdf should be placed in the same directory for SIMPL's F1 help function to work properly.

The module consists of a single SIMPL+ wrapper module to the core SIMPL# driver:

- NAD AVR Generic Driver (Ultamation) v2.01.usp & .ush
- Ultamation.SimplSharp.NadAvrFree.clz
- NAD Universal AVR Driver v2.01.pdf (this file)

INPUTS

Most inputs/outputs are grouped by their zone – either Main or Zone2 is supported in this release. Some functions are not available on all zones.

[Zone]PowerOn|Off – Turn the zone on or off (standby).

[Zone]PowerQuery – Request the current power state.

[Zone]MuteOn|Off – Mute/Unmute zone.

[Zone]MuteQuery – Request the current mute state.



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[Zone]VolumeUp/Down – Raise or lower the volume. This signal is level sensitive and will ramp up/down while held high. The rate is governed by the RampRepeat parameter.

[Zone]VolumeQuery – Request the current volume level. The value is a Crestron full scale analog value (i.e. 0-65535) and this is scaled to the device's configured operating range. This is approximately, but not fixed to, -99 dB to +19 dB.

[Zone]SourceQuery – Request the current zone's source index. Source 1 = 1.

[Zone]DiracOff – Disable any current DIRAC preset selection. There is no corresponding "On" as this is achieved by selecting a DIRAC preset value using the Analog signal.

[Zone]DiracQuery – Request the current DIRAC preset.

[Zone]ListeningMode* – Select a listening mode.

NOTE: Not all listening modes may be appropriate for the selected input or format.

[Zone]ListeningModeQuery – Request the current Listening Mode (and format if available).

[Zone]VolumeSet – Set the zone volume level. The level is full scale – i.e. 0d is the configured minimum (e.g. -92 dB) and 65535d/100% is the configured maximum (e.g. +16 dB)

[Zone]SourceSet – Select a source by index (source 1 = 1)

[Zone]DiracPresetSet – Select a DIRAC preset – if the selected preset is not present, DIRAC will be disabled.



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OUTPUTS

You may wish to query the initial state of the device on program start-up, but after this, the device will report changes to various properties asynchronously – so no need to keep polling.

[Zone]PowerIsOn/Off – Current zone power state.

[Zone]MuteIsOn/Off – Current zone mute state.

[Zone]DiracIsOn/Off – Current zone DIRAC state. This applies to the Main Zone only.

*[Zone]ListeningModels** – Listening mode. This applies to the Main Zone only.

*[Zone]FormatIs** – Current audio content format. This applies to the Main Zone only.

[Zone]Volume – The current volume level (as a full scale Crestron analog value 0-65535).

[Zone]Source – The current source selection.

[Zone]DiracPreset – The current DIRAC preset selection.

Warranty

The module is provided without any warranty with respect to NAD's IP Control. Ultimatum will endeavour, through best efforts, to maintain the module's functionality as changes are made to the API.