GENERAL INFORMATION

SIMPLWINDOWS NAME:	Denon AVR-4311CI IP v1.0
CATEGORY:	AV Surround Processor
VERSION:	1.0
SUMMARY:	Controls all of the standard functions and provides true feedback via TCP/IP.
GENERAL NOTES:	This module will control all of the standard functions on a Denon AVR-4311CI AV Surround Receiver via TCP/IP The unit provides true feedback. Functions provided include main zone control, zone 2 control and zone 3 control, surround mode selection, surround speaker level adjustments, and tuner band/preset selection. It is necessary to pulse the initialize once to synchronize unit's settings with the controller. This initialization takes approximately 5 seconds. **Note**: For surround mode selection, certain selections are only valid while certain sources are selected. So choosing a particular surround mode may actually cause a slightly different mode to be activated on the Denon system. However, since true feedback is provided, the actual surround mode currently active will be reflected on the output of this module. The AVR-4311CI has an available surround back amplifier channel. If no surround back speakers are used in the main room, their amplifier channels can be assigned for multi-zone use or the front speaker's Bi-Amp connection. IPod and USB control are available at this time. Manufacturer states that presets are made through menu structure of unit. Preset memory store functions controlled from the panel are assigned to slots selected with preset up/down. To check vendor firmware, hold status and return buttons and cycle power. This module was tested with the Denon AVR-4311CI. Denon uses the same protocol on most of their receivers. This module should also work on the following models: • AVR-3311CI • AVR-2311CI • AVR-4310CI • AVR-5308CI
CRESTRON HARDWARE REQUIRED:	C2NENET-1, C2NENET-2
SETUP OF CRESTRON HARDWARE:	TCP/IP Port 23
VENDOR FIRMWARE:	Firmware Package Version: .0003
VENDOR SETUP:	Set Network Standby mode on by selecting MENU -> Manual Setup -> Network Setup -> Other -> Network Standby. Set this parameter to ON.
CABLE DIAGRAM:	N/A

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CONTROL:

Power_<On/Off/Toggle>	D	Pulse to turn the receiver's main power on and off.
Main_Zone_<On/Off>	D	Pulse to turn the receiver's zoned power on and off.
Main_Input_*	D	Pulse to select the input.
Main_Volume_<Up/Down>	D	Press and hold to adjust the zone's volume level.
Main_Volume_Mute_<On/Off/Toggle>	D	Pulse to turn the zone's volume mute on and off.
Zone_2_<On/Off>	D	Pulse to turn the receiver's zone 2 power on and off.
Zone_2_Input_*	D	Pulse to select the zone 2 input.
Zone_2_Volume_<Up/Down>	D	Press and hold to adjust the zone 2 volume level.
Zone_2_Volume_Mute_<On/Off/Toggle>	D	Pulse to turn the zone 2 volume mute on and off.
Zone_3_On/Off	D	Pulse to turn the receiver's zone 3 power on and off.
Zone_3_Input_*	D	Pulse to select the zone 3 input.
Zone_3_Volume_<Up/Down>	D	Press and hold to adjust the zone 3 volume level.
Zone_3_Volume_Mute_<On/Off/Toggle>	D	Pulse to turn the zone 3 volume mute on and off.
Mode_*	D	Pulse to select the surround and audio modes.
Rear_Surround_*	D	Pulse to select the rear surround mode.
Channel_*_Up/Down	D	Press and hold to adjust the channel's gain up and down.
Input_Mode_*	D	Pulse to select the digital audio input mode.
Video_Input_*	D	Pulse to select the video Input.
Tone_Control_<On/Off>	D	Pulse to set tone control on or off.
Cinema_EQ_<On/Off>	D	Pulse to turn Cinema EQ on or off.
Record_*_Input	D	Pulse to select the recording input.
Record_Select_Cancel	D	Pulse to cancel the record selection.
***_Tuner_Band**	D	Pulse to set the tuning band between Analog AM/FM, HD AM/FM.

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Certified Module

Partner: Denon
Model: AVR-4311CI
Device Type: AV Surround Receiver

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Key_AM_FM_*	D	Pulse for direct key tuner entry. Note: At least one tuner (Analog or HD) has to be selected in at least 1 zone for direct tuning to work. There are 2 separate keyboard entry mechanisms (Analog and HD). Band must be selected first to enable keyboard function.
Analog_Tuner_Mode_<Auto/Manual>	D	Pulse to set the tuning to auto tune or manual tune for Analog AM/FM.
Analog_Tuner_Frequency_<Up/Down>	D	Press and hold to adjust the tuner frequency for Analog AM/FM.
Analog_Tuner_Preset Memory	D	Press to set Analog AM/FM tuning to a preset.
Analog_Tuner_Preset_*	D	Pulse to select the desired preset for Analog AM/FM.
Analog_Tuner_<Next/Previous>_Preset	D	Pulse to step through the tuner presets for Analog AM/FM.
Key_HD_*	D	Pulse for direct key tuner entry. Note: At least one tuner (Analog or HD) has to be selected in at least 1 zone for direct tuning to work. There are 2 separate keyboard entry mechanisms (Analog and HD). Band must be selected first to enable keyboard function.
HD_Tuner_Mode_<Auto/Manual>	D	Pulse to set the tuning to auto tune or manual tune for HD AM/FM.
HD_Tuner_Frequency_<Up/Down>	D	Press and hold to adjust the tuner frequency for HD AM/FM.
HD _Preset_Memory	D	Press to set HD AM/FM tuning to a preset.
HD_Tuner_Preset_*	D	Pulse to select the desired preset for HD AM/FM.
HD_Tuner_<Next/Previous>_Preset	D	Pulse to step through the tuner presets for HD AM/FM.
Key_Sirius_*	D	Pulse for direct key tuner entry. Note: Sirius has to be selected in at least 1 zone for direct tuning to work.
Sirius_Tuner_Frequency_<Up/Down>	D	Press and hold to adjust the tuner channel for Sirius.
Sirius _Preset Memory	D	Press to set Sirius tuning to a preset.
Sirius_Tuner_Preset_*	D	Pulse to select the desired preset for Sirius.
Sirius_Tuner_<Next/Previous>_Preset	D	Pulse to step through the tuner presets for Sirius.
Network_Audio/USB/iPod_Direct_*	D	Pulse to control functions associated with any Network Audio, USB or iPod Direct sources.
iPod_Dock_*	D	Pulse to control functions associated with the iPod Dock source.
Cursor_<Up/Down/Left/Right/Enter/Menu>	D	Press to set DAB tuning to a preset.
Initialize	D	Pulse to initialize.

{{TCP/IP_Client_>>_Connect-F}}	D	To be connected to the "Connect_F" input on the TCP/IP client definition.
{{TCP/IP_Client_>>_status}}	A	To be connected to the "status" input on the TCP/IP client definition that will be communicating with the unit being controlled.
{{TCP/IP_Client_>>_RX$}}	S	To be connected to the "RX$" input on the TCP/IP client definition that will be communicating with the unit being controlled.

FEEDBACK:

Power_Is_<On/Off>	D	High to indicate the current power state of the unit.
Main_Zone_Is_<On/Off>	D	High to indicate the current main zone status.
Main_Input_Is_*	D	High to indicate the current main zone source.
Main_Volume_Gauge	A	Analog value indicating the current main zone volume level. To be displayed using a gauge on a touch panel.
Main_Volume_Text	S	Serial signal indicating the current main zone volume level.
Main_Mute_is_<On/Off>	D	High to indicate the current main volume mute state.
Zone_2_Is_<On/Off>	D	High to indicate the current zone 2 status.
Zone_2_Input_Is_*	D	High to indicate the current zone 2 source.
Zone_2_Volume_Gauge	A	Analog value indicating the current zone 2 volume level. To be displayed using a gauge on a touch panel.
Zone_2_Volume_Text	S	Serial signal indicating the current zone 2 volume level.
Zone_2_Mute_Is_<On/Off>	D	High to indicate the current zone 2 volume mute state.
Zone_3_Is_<On/Off>	D	High to indicate the current zone 3 status.
Zone_3_Input_Is_*	D	High to indicate the current zone 3 source.
Zone_3_Volume_Gauge	A	Analog value indicating the current zone 3 volume level. To be displayed using a bar graph on a touch panel.
Zone_3_Volume_Text	S	Serial signal indicating the current zone 3 volume level.
Zone_3_Mute_Is_<On/Off>	D	High to indicate the current zone 3 volume mute state.
Mode_Is_*	D	High to indicate the currently active surround mode.

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Rear_Surround_Mode_Is_*	D	High to indicate the currently active rear surround mode.
*_Level_Text	S	Serial signal indicating the current level for the channel.
Input_Mode_Is_*	D	High to indicate the currently selected digital input mode.
Video_Input_Is_*	D	High to indicate the currently selected video input.
Tone_Control_Is_<On/Off>	D	High to indicate the current tone control status.
Cinema_EQ_Is_<On/Off>	D	High to indicate the current state of the cinema EQ.
Record_*_Input_Is_Active	D	High to indicate the current record input.
Record_Select_Is_Cancelled	D	High to indicate the recored input is cancelled.
<Analog/HD>_Tuner_Band_Is_<AM/FM>	D	High to indicate the current tuner band (currently Analog or HD).
Direct_Display_AM_FM_Text	S	Serial String indicating current keypad entry for direct tuning analog AM/FM.
AM_FM_Preset_Text	S	Serial String indicating the current AM/FM preset.
Analog_Tuner_Mode_Is_<Auto/Manual>	D	High to indicate the current analog AM/FM tuner mode.
Current_Analog_Tuner_Frequency_Text	S	Serial signal indicating the current AM/FM tuner frequency.
Analog_Tuner_Preset_Is_*	D	High to indicate the currently selected AM/FM tuner preset.
Direct_Display_HD_Text	S	Serial string indicating current keypad entry for direct tuning HD AM/FM.
HD_Preset_Text	S	Serial string indicating current HD preset.
HD_Station_Name_Text	S	Serial string indicating current HD station short name.
HD_Station_Name_Long_Text	S	Serial string indicating current HD station long name.
HD_Signal_Text	S	Serial string indicating current HD signal level.
HD_Multicast_Current_CH_Text	S	Serial string indicating current HD Multicast current channel number.
HD_Multicast_CH_Text	S	Serial string indicating current HD Multicast channel number.
HD_Program_Type_Text	S	Serial string indicating current HD program type.
HD_Artist_Text	S	Serial string indicating current HD artist.
HD_Title_Text	S	Serial string indicating current HD title.

HD_Album_Text	S	Serial string indicating current HD album.
HD_Genre_Text	S	Serial string indicating current HD genre.
HD_Tuner_Mode_Is_<Auto/Manual>	D	High to indicate the current analog HD tuner mode.
HD_Tuner_Frequency_Text	S	Serial signal indicating the current HD tuner frequency.
HD_Tuner_Preset_Is_*	D	High to indicate the currently selected HD tuner preset.
Direct_Display_Sirius_Text	S	Serial String indicating current keypad entry for direct tuning Sirius Tuner.
Sirius_Preset_Text	S	Serial string indicating current Sirius preset.
Sirius_Channel_Name_Text	S	Serial string indicating current Sirius channel name.
Sirius_Artist_Text	S	Serial string indicating current Sirius artist.
Sirius_Title_Text	S	Serial string indicating current Sirius title.
Sirius_Radio_ID_Text	S	Serial string indicating current radio ID.
Sirius_Signal_Text	S	Serial string indicating current Sirius signal.
Sirius_Tuner_Frequency_Text	S	Serial signal indicating the current Sirius tuner number.
Sirius_Tuner_Preset_Is_*	D	High to indicate the currently selected Sirius preset.
Is_Busy_Initializing	D	High to indicate the unit is busy initializing.
Connected	D	High to indicate that there is an IP connection to the plasma.
Connection_Status_Text	S	Indicates the current IP connection status to the plasma.
{{Connect_>>_TCP/IP_Client}}	D	To be connected to the "Connect" output on the TCP/IP client definition that will be communicating with the unit being controlled.
{{TX$_>>_TCP/IP_Client}}	S	To be connected to the "TX$" output on the TCP/IP client definition that will be communicating with the unit being controlled.

TESTING:

OPS USED FOR TESTING:	Use v3.155.1240
SIMPL WINDOWS USED FOR TESTING:	2.12.44
DEVICE DB USED FOR TESTING:	31.05.005.00
CRES DB USED FOR TESTING:	23.05.010.01
SYMBOL LIBRARY USED FOR TESTING:	690
SAMPLE PROGRAM:	Denon AVR-4311CI IP v1.0 Demo PRO2
REVISION HISTORY:	v1.0 – Original release.

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