Sirius Satellite Radio Module v1
Module Application Guide

Description

This module allows a Crestron 2-Series processor to control a Sirius satellite radio tuner via RS-232. It allows power control, channel tuning, channel skip/lockout controls, and preset store/recall functionality. It also provides feedback for current channel/song information, signal strength, and Sirius ID.
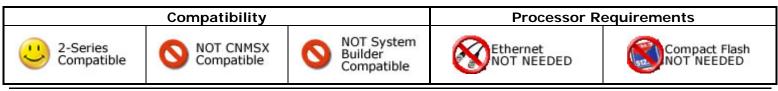
Sirius now offers their SiriusConnect Home Pro Tuner and SiriusConnect Home Tuner. The speed of the serial control on these tuners is remarkably fast and with pricing starting at $49.95 they are a great value. Go see www.sirius.com for more details.

Supported Processors

Any 2-series processor with an available RS-232 port running CUZ 3.154 or higher.

Compatibility			Processor Requirements	
2-Series Compatible	NOT CNMSX Compatible	NOT System Builder Compatible	Ethernet NOT NEEDED	Compact Flash NOT NEEDED

Serial Cable Pinout

DB9 FEMALE
CRESTRON

DB9 MALE
SIRIUS SC-H1

SERIAL SETTINGS	
COMM STD	RS232
BAUD RATE	57600 (DEFAULT)
DATA BITS	8
STOP BITS	1
PARITY	NONE
HW HANDSHAKING	NONE
SW HANDSHAKING	NONE

WWW.CONTROLWORKS.COM

Module Application

This module allows a Crestron 2-Series processor to control a Sirius satellite radio tuner via RS-232. A Sirius SCH1P2 & SCH2P tuner was used to develop this module, but the module should be compatible with the Sirius SCHDOC1 as well (with compatible dock n play and portable radios).

The module has also been tested against the Polk SRH1000, and ADA SRX and was found to control them correctly only if they were put into pass-through or installer mode. This mode is not a stable mode in either receiver as power-cycling the receiver will drop it back into normal operation mode and thus defeat control.

By default, the Sirius tuners are setup to send unsolicited updates of program data upon a channel change or a song change.

The allow_skipped and allow_locked inputs will only have an effect on the direct tuning keypad of the module. Channel, Category, and Program up/down commands will always bypass skipped or locked channels.

The press-and-hold presets store the name and channel number in the processor's NVRAM. Upon first loading the program, you may have gibberish on the preset buttons. To resolve this, you can press-and-hold to store a preset in each location. Alternately, you can erase the NVRAM of you processor by typing "nvramclear" at the command prompt in Viewport or Toolbox. This will erase **all** NVRAM in your program, not just the presets. If you have other information stored in the NVRAM, it will be lost.

Signal And Parameter Descriptions

Bracketed signals such as "[signal_name]" are optional signals

DIGITAL INPUTS

[power_standby] .... pulse to put the tuner into standby mode

[power_on]... pulse to put the tuner into full power mode

[keypad_0-9], enter, clear .... pulse these inputs to use on a keypad for direct channel entry

[allow_skipped] .... allows direct channel entry to tune skipped channels.

[allow_locked].. allows direct channel entry to tune locked channels.

[skip/unskip_channel] .... skips/unskips current channel from being accessed during channel/category surfing. Direct keypad entry will still bring up skipped channels if "allow_skipped" input is high.

[lock/unlock_channel] .... locks/unlocks current channel from being accessed during channel/category surfing. Direct keypad entry will still bring up locked channels if "allow_locked" input is high.

[category_up/down] .... surf category up/down.

[program_up/down]... surf channel up/down within current category.

[channel_up/down]... surf channel up/down regardless of category.

preset_1-10... recalls a previously stored preset channel. To store a preset, hold the button down for 3 seconds. The name of the channel will appear on the button. Both the channel name and number are stored in non-volatile memory.

[poll_power] .... pulse to poll for power state.

[poll_signal]... pulse to poll for signal strength. Returns satellite, terrestrial, and combined levels.

[poll_sirius_id] .... pulse to poll for Sirius ID of tuner.(Note: can also be viewed on Channel 0 at all times.)

[poll_channel_info] .... pulse to poll for current channel information.

[poll_preset_labels] .... refresh indirect text on preset buttons.

[poll_currently_playing].. Hold high when during normal use. Keep low when polling for power, signal, ID and channel info. This input refreshes the currently playing artist/song info.

ANALOG INPUTS

This module does not utilize any analog inputs.

SERIAL INPUTS

sirius_rx$. .... serial rx$ from Sirius tuner's COM port.

DIGITAL OUTPUTS

[power_standby_fb].. latches high when tuner reports in standby mode
[power_on_fb] .... latches high when tuner reports in full power mode
[power_wait_fb]... high while tuner is in power up/down sequence
[firmware_update].. high when tuner is receiving a firmware update
[chan_invalid_fb]... pulses when an invalid channel error is returned by tuner
[chan_unsubscribed_fb] .... pulses when an unsubscribed channel error is returned by tuner
[chan_locked_fb]... pulses when a locked channel error is returned by tuner.(Note: this will only pulse if the "allow_locked" input is low.)
[chan_skipped_fb] .... pulses when a skipped channel error is returned by tuner. (Note: this will only pulse if the "allow_skipped" input is low.)
[chan_out_of_range_fb] .... pulses when an out of range channel is returned by tuner. (This happens, for example, when tuning to a channel above 223.)
preset_1-10_fb .... latches high when tuner is currently tuned to this preset station

ANALOG OUTPUTS

[composite_signal] .... composite signal strength indicator
[satelitte_signal] .... satellite signal strength indicator
[terrestrial_signal] .... terrestrial signal strength indicator
[current_channel].. currently tuned channel number
[keypad_display] .... display for direct tuning keypad

SERIAL OUTPUTS

[sirius_tx$.. serial tx$ to Sirius tuner's COM port
[sirius_id$] .... Sirius ID of tuner. Result of "poll_sirius_id"
[current_channel$] .... currently tuned channel name
[current_category$]... currently tuned channel's category
[current_artist$].. currently playing song artist
[current_song$] .... currently playing song title
[current_composer$] .... currently playing song composer
preset1-10 name$ .... channel name for presets 1-10
preset1-10 song$ .... currently playing song for presets 1-10
preset1-10_artist$.. currently playing artist for presets 1-10

PARAMETERS

Module ID.. ID of Sirius tuner module being controlled. Default is 0.
Preset_Update_Time .... time parameter for time between preset currently playing updates. Valid range is 5s to 60s.

Support

This module is supported by ControlWorks Consulting, LLC. Should you need support for this module please email support@controlworks.com or call us at 440-449-1100. ControlWorks normal office hours are 9 AM to 5 PM Eastern, Monday through Friday, excluding holidays.

Before calling for support, please ensure that you have loaded and tested operation using the included demonstration program and touchpanel(s) to ensure that you understand the correct operation of the module. It may be difficult for ControlWorks to provide support until the demonstration program is loaded.

Updates, when available, are automatically distributed via Email notification to the address entered when the module was purchased. In addition, updates may be obtained using your username and password at http://www.thecontrolworks.com/customerlogin.aspx.

Distribution Package Contents

The distribution package for this module should include:

sirius_radio_control_v1.umc.......................................Crestron User Module for control of Sirius tuner
sirius_control_engine_v1.usp ....SIMPL+ file used within the tuner control module
sirius_control_engine_v1.ush ....SIMPL+ header file
sirius_demo_Xpanel_v1.vtp ....Demo touchpanel for Xpanel
sirius_radio_module_v1_demo.smw ....Demo program for PRO2 processor
Sirius_Module_v1_Help.pdf ....This help file

Revision History

V1 bob@controlworks.com 2008.10.16
     Initial release

Development Environment

This version of the module was developed and tested on the following hardware and software.
Different versions of hardware or software may or may not operate properly. If you have
     questions, please contact us.

Hardware	Firmware Version
Crestron PRO2 Processor	4.000.0226
Sirius SC-H1	G3, SSP v1.7.0
Sirius SCH2P	G3, SSP v1.7.0
Software	**Software Version**
Crestron SIMPL Windows	2.10.32
Crestron Vision Tools Pro-e	3.8.2.7
Crestron Database	20.00.013.00
Device Database	20.01.002.00
Crestron Symbol Library	567

ControlWorks Consulting, LLC Module License Agreement

Definitions:
ControlWorks, *We*, and *Us* refer to ControlWorks Consulting, LLC, with headquarters located at 701 Beta Drive, Suite 22 Mayfield Village, Ohio 44143-2330. *You* and *Dealer* refer to the entity purchasing the module. *Client* and *End User* refer to the person or entity for whom the Crestron hardware is being installed and/or will utilize the installed system. *System* refers to all components described herein as well as other components, services, or utilities required to achieve the functionality described herein. *Module* refers to files required to implement the functionality provided by the module and may include source files with extensions such as UMC, USP, SMW and VTP. *Demo Program* refers to a group of files used to demonstrate the capabilities of the Module, for example a SIMPL Windows program and VisionTools Touchpanel file(s) illustrating the use of the Module but not including the Module. *Software* refers to the Module and the Demo Program.

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Provision of Support
We provide limited levels of technical support only for the most recent version of the Module as determined by Us. We do not provide support for previous version of the module, modifications to the module not made by Us, to persons who have not purchased the module from Us. In addition, we may decline to provide support if the Demo Program has not been utilized. We may withdraw a module from sale and discontinue providing support at any time and for any reason, including, for example, if the equipment for which the Module is written is discontinued or substantially modified. The remainder of your rights and obligations pursuant to this license will not be affected should ControlWorks discontinue support for a module.

Modification of Software
You may not decrypt (if encrypted), reverse engineer, modify, translate, disassemble, or de-compile the Module in whole or part. You may modify the Demo Program. In no event will ControlWorks Consulting, LLC be liable for direct, indirect, incidental or consequential damages resulting from You modifying the Software in any manner.

Indemnification/Hold Harmless
ControlWorks, in its sole and absolute discretion may refuse to provide support for the application of the Module in such a manner that We feel has the potential for property damage, or physical injury to any person. Dealer shall indemnify and hold harmless ControlWorks Consulting LLC, its employees, agents, and owners from any and all liability, including direct, indirect, and consequential damages, including but not limited to personal injury, property damage, or lost profits which may result from the operation of a program containing a ControlWorks Consulting, LLC Module or any component thereof.

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