Partner: Bose
Model: FreeSpace E-4
Device Type: Multi zone

GENERAL INFORMATION

SIMPLWINDOWS NAME:	Bose FreeSpace E-4 System
CATEGORY:	Multi-Zone
VERSION:	1.0
SUMMARY:	The Bose FreeSpace E-4 System is an integrated four-channel digital signal processor and 400-watt power amplifier for 70/100V business applications. This module allows for the basic control typically available from a Bose wall mount keypad: source select, volume up/down, mute, and auto volume on/off. Additionally, the module allows the user to turn the entire E-4 System on or off.
GENERAL NOTES:	Please note that this is a one-way serial module. As such, all feedback from the module is simulated and will not remain "in sync" if other control devices, such as Bose keypads or the FreeSpace unit's power button, are used. Similarly, whenever the unit is powered on (whether upon system startup or during system operation) all parameters revert to the values stored in the system's Flash memory. Default values for volume, source selection, etc. are all set by a configuration file loaded into the unit's Flash Memory from a PC running "FreeSpace Installer" software. This module was tested on a unit configured with "FreeSpace Installer" software Version 1.0.

Because of the reasons stated above, FEEDBACK FROM THE MODULE WILL NOT BE ACCURATE UNTIL A COMMAND OF THE SAME TYPE IS SENT; in other words, the Source Selection feedback will not be accurate until a Source Selection command is sent. YOU MUST SELECT A "ZONE" FIRST before attempting to send commands for volume, source selection, mute, or auto volume.

Please note that, although the sample program demonstrates the use of all possible commands, it would not be practical to include discrete power commands with a "PowerToggle" command in the same program. It would also not be expected to use a "Mute Toggle" command if discrete mute commands were in the program.

This module incorporates the complete RS-232C protocol as provided to Crestron. No function (command string) has been left out. There was no indication of any command strings that would be returned to the Crestron control system to provide for true feedback.

Note that all digital inputs to this module should be momentary, (as if coming from a button on a touch panel), or 0. |
| **CRESTRON HARDWARE REQUIRED:** | 2-Series Processor, C2COM3, CNMSX, CNXCOM, ST-COM |
| **SETUP OF CRESTRON HARDWARE:** | Baud Rate - 57600

Parity - None

Data Bits - 8

Stop Bits - 1 |
| **VENDOR FIRMWARE:** | None |

CRESTRON

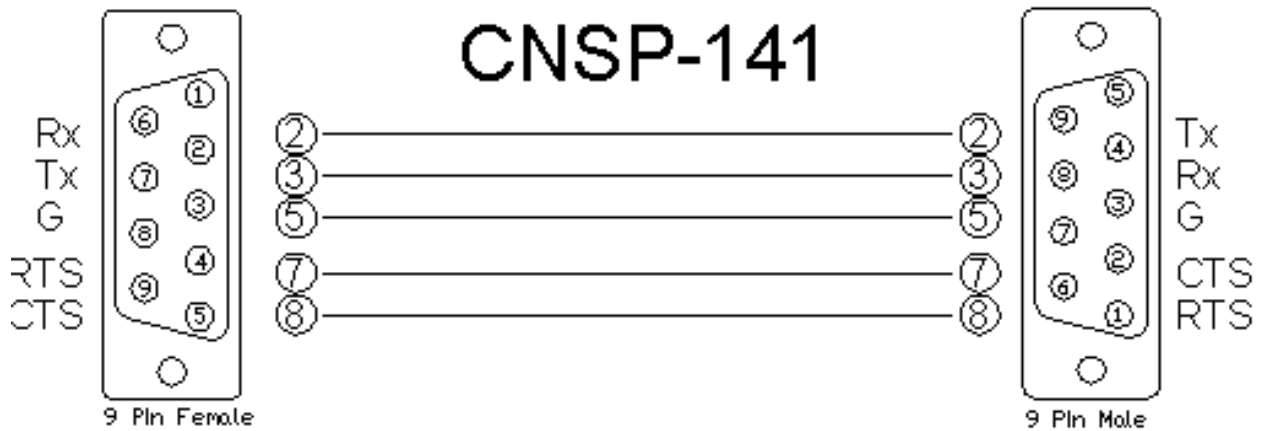## I²P Certified Module

CRESTRON
INDUSTRY
INTEGRATION
PARTNERSHIP

VENDOR SETUP:	The FreeSpace E-4 System must be configured using "FreeSpace Installer" software (provided on a CD-ROM in package with unit). Many system parameters are set by using this software application. Of particular relevance to the Crestron control system: the software application allows the installer to specify what sources will be available to each zone, as well as the default source for each zone and initial volume level.
	PLEASE MAKE SURE that the "rocker" type power switch on the rear of the E-4 unit is set to "ON". The LED's on the front of the E-4 system indicate status of the individual Amp outputs and the individual audio sources. For the Amp outputs: green="operating", red="fault", and unlit="no signal". For the audio sources: green="good signal", yellow="low signal", unlit="no signal", and red="clipping".
CABLE DIAGRAM:	CNSP-141

CNSP-141

	9 Pin Female		9 Pin Male	
Rx	2	————	2	Tx
Tx	3	————	3	Rx
G	5	————	5	G
RTS	7	————	7	CTS
CTS	8	————	8	RTS

Partner: Bose
Model: FreeSpace E-4
Device Type: Multi zone

CONTROL:

Power_On/Off	D	Turns power to E-4 System on or off
Power_Toggle	D	Toggles power state on each successive press
Zone(X)	D	Selects zone to control
Volume_Up/Down	D	Press and hold to raise or lower volume respectively
Select_Source_(X)	D	Selects audio source to route to zone (if defined in Bose Configuration file)
Mute_Toggle	D	Toggles Mute state for selected zone on each successive press
Mute_On/Off	D	Turns Mute on or off for selected zone
Auto_Volume_On/Off	D	Turns Auto Volume on or off for selected zone

FEEDBACK:

To_Device$	S	Serial signal to be routed to an RS-232 port
Power_On/Off_FB	D	Simulated feedback indicating the power state of the E-4 System
Zone(X)_FB	D	Indicates which zone has been selected for control
Select_Source_(X)_FB	D	Simulated feedback indicating which audio source is to be routed to selected zone
Auto_Volume_On/Off_FB	D	Simulated feedback indicating state of the "Auto Volume" function

TESTING:

OPS USED FOR TESTING:	3.015
SIMPLWINDOWS USED FOR TESTING:	2.03.12
SAMPLE PROGRAM:	Bose FreeSpace E-4 System Demo
REVISION HISTORY:	None