

# HRI-200 WiRES-X to SCOM 7330 Wiring Diagram

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# HRI-200 WiRES-X to SCOM 7330 Wiring Harness

**Before using this document, always check for an updated version.** Download the latest version of this file at: <http://www.wa8kim.com/files/HRI-200%20WiRES-X%20To%20SCOM%207330%20Wiring%20Diagram.pdf>

For more information, visit: <http://www.wa8kim.com/repeater.html>

## **Document Features:**

- SUPPORTS ANALOG WiRES-X ONLY (No digital support)
- Includes graphical and chart wiring diagrams.
- Includes example SCOM 7330 programming script.

## **Included Example Script Features:**

- Programmed to connect the HRI-200 to the SCOM 7330 Radio Port 3. Any port can be used with minor programming changes.
- Enable / disable (Toggle On / Off) with a single command.
- Announces whenever WiRES-X is enabled or disabled.
- Disable only incoming or outgoing audio (great for monitoring nets without interrupting them).

## **Resources Used On The SCOM 7330:**

The programming and wiring diagrams in this document are set up as follows:

- Designed to use the SCOM 7330 Radio Port 3

## **This Setup Requires The Following Hardware:**

- The 10pin to 6pin round cable that is supplied with the HRI-200
- [SCOM 7330 Radio Port Cable](#) or make your own: (1) DB9 Male connector, terminals, housing

## **This document contains two methods of Wiring:**

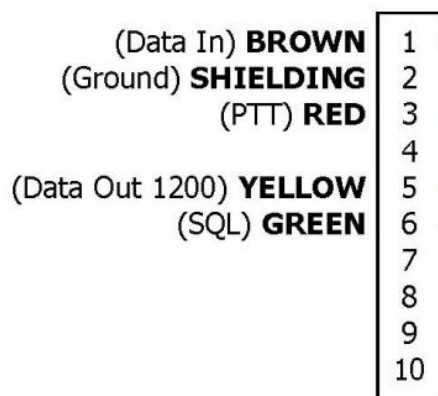
- Method #1: This is the easiest and most efficient way, but I have not personally tested it
- Method #2: This is the way my repeater is set up. It requires purchasing an optocoupler relay module and an 8200 ohm resistor. I used this method because, at the time, I was unaware that the HRI-200 could be set to SQL Low (ground) activation. By default, it is set to High (+5v) activation. This method is working great for me... *if it ain't broke, don't fix it.*  
I include this method mostly for learning purposes.

## Method #1: HRI-200 WIRES-X to SCOM 7330 Wiring Harness

Yaesu Function	HRI-200 6 Pin *	HRI-200 10 Pin	Yaesu Color	SCOM Factory Cable	SCOM Function
Data Out 1200	1	5	Yellow	5 Tx Center	Tx Audio
PTT	2	3	Red	2 Yellow	COR
Data In	3	1	Brown	1 Rx Center	Rx Audio
Ground	4	2	Shielding	6,7,9 Black & Audio Grounds	Ground
SQL	6	6	Green	4 Orange	PTT

\* Only the 10 pin round connector is needed. The 6 pin wiring is shown for reference only

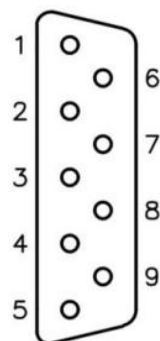
### HRI-200 Factory Supplied 10pin - 6pin Cable



### SCOM 7330 Factory Cable



\* Pins 6 , 7 , 9



## **Method #2: (My Method: Inefficient But Works!)**

### **Method #2: The (Very Minor) Benefits of Using the Optocoupler Replay Module:**

- Provides an additional PTT indicator light (on the relay module)
- Provides an audible click whenever PTT is activate
- If you already wired it this way (like I did), there's no need to rewire the setup.

### **This Setup Requires The Following Hardware:**

- The 10pin to 6pin round cable that is supplied with the HRI-200
- [SCOM 7330 Radio Port Cable](#) or make your own: (1) DB9 Male connector, terminals, housing
- A relay module. I used a two relay module because I also use it for my EchoLink: [SMAKN® 2CH Isolated Optocoupler High/Low Level Trigger Relay Module 12VDC](#) (\$9 on Amazon.com)
- 8200 Ohm Resistor

### **Author Comment (Short Story):**

My repeater started out as a simple Kenwood TKR-820 with features and hardware added incrementally... and not necessarily efficiently.

I first added EchoLink to the repeater using the ARS [EchoLink Serial Port Adapter](#). One problem led to another and I ended up purchasing a USB-to-Serial adapter, USB sound card, ground-loop isolating transformers, and an [Optocoupler Relay Module](#) to get the EchoLink to work well. If I were to do it all over again, I would have simply purchased the [Signalink USB Interface](#)... it already has the sound card, serial adapter, ground-loop isolating transformers build in with no need for the optocoupler relay.

When I started this project, I was unaware that the HRI-200 could be set to SQL Low activation. Since I already was using one relay of the Optocoupler Relay Module, it was easy for me to use it to apply power to the HRI-200's SQL Line for High (+5v) activation. If I were to start over, I would have simply tried to set the SCOM 7330's J27 COR Pullup jumper to enable the pullup resistor and wired the HRI-200 SQL line directly to it. I haven't tried the direct connection, but in theory it should work fine.

## Method #2: (My Method: Inefficient But Works!)

### HRI-200 Wires-X to SCOM 7330 Wiring Harness

(Chart Version – See next page for graphical version of same wiring harness)

Yaesu Function	HRI-200 6 Pin *	HRI-200 10 Pin	Yaesu Color	SCOM Factory Cable	SCOM Function
Data Out 1200	1	5	Yellow	5 Tx Center	Tx Audio
PTT	2	3	Red	2 Yellow	COR
Data In	3	1	Brown	1 Rx Center	Rx Audio
Ground	4	2	Shielding	6,7,9 Black & Audio Grounds	Ground
SQL	6	6	** Green (See below)	** 4 Orange (See below)	PTT

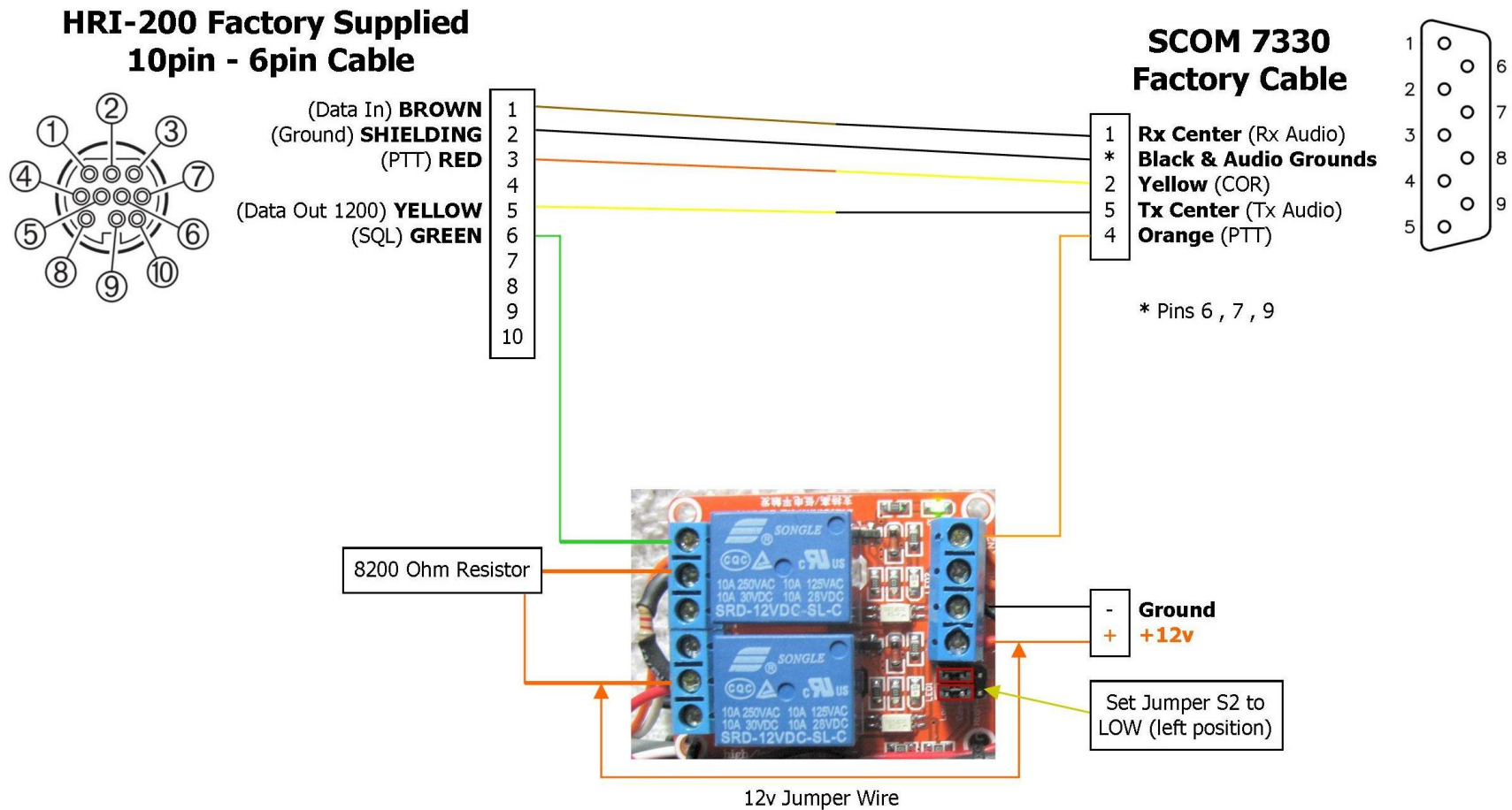
\* Only the 10 pin round connector is needed. The 6 pin wiring is shown for reference only

Relay Module	Yaesu Harness	SCOM Harness	SCOM Power
DC+			+12v
DC-			Ground
COM2 to 8200 ohm Resistor then to +12v			+12v
NO2	6 Green		
IN2		4 Orange	
S2 Jumper: Set to LOW			

## Method #2: (My Method: Inefficient But Works!)

### HRI-200 WIRES-X to SCOM 7330 Wiring Harness

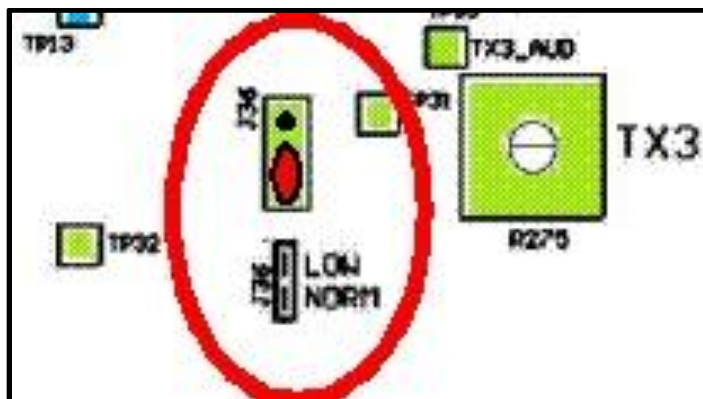
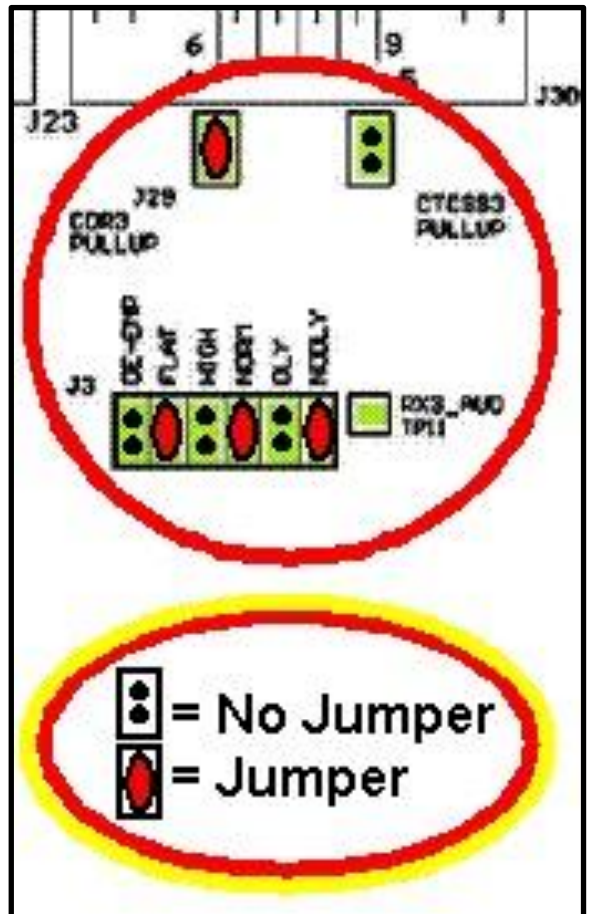
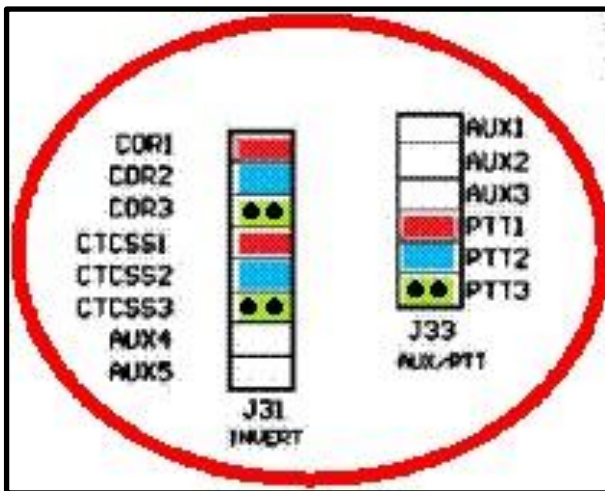
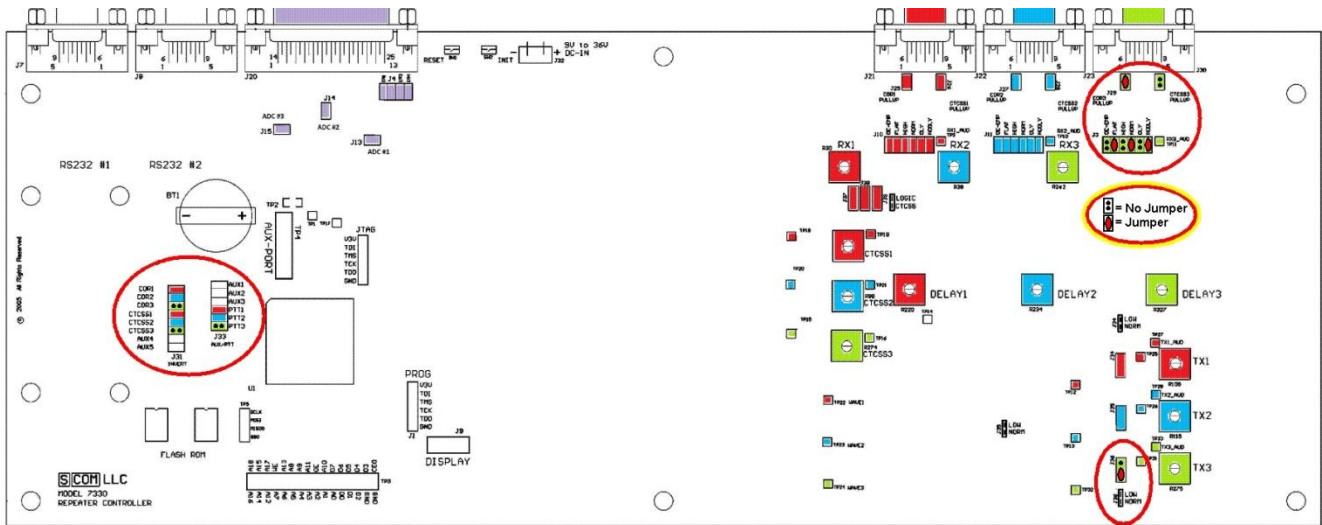
(Graphical Version – See previous page for chart version of same wiring harness)





# SCOM 7330 Jumper Settings

(These are the settings that are working well for me)



- J31 COR3 (NO)
- J29 COR3 PULLUP (YES)
- J3 DE-EMP (NO) / J3 FLAT (YES) / J3 HIGH (NO) / J3 NORM (YES) / J3 DLY (NO) / J3 NODLY (YES)
- J31 CTCSS3 (NO)
- J30 CTCSS3 PULLUP (NO)
- J36 (NORM)
- J33 PTT3 (NO)

## Programming The SCOM 7330

An example script is included on the next two pages. It is designed to work with the program Prog7730. Download link for Prog7330: <http://www.sigridco.com/Prog7330.html>  
Prog7330 removes all comments and replaces "MPW" with your actual password.

**The Script Below Assumes You Are Using The SCOM 7330 Radio Port 3 For Your WiRES-X Connection**

### **SCOM 7330 Commands Included In The Following Script:**

A2 WiRES-X On/Off

#### Individual Commands:

A30 WiRES-X: Disable All  
A31 WiRES-X: Enable All  
A32 Audio coming from WiRES-X: Disable  
A33 Audio coming from WiRES-X: Enable  
A34 Audio going to WiRES-X: Disable  
A35 Audio going to WiRES-X: Enable

The example script includes the custom audio word, "Wires" by Sean Caldwell. To install this word (and all my custom audio words), feel free to download my CustomAudioLib.bin file (and the .raw audio files): <http://www.wa8kim.com/files/WA8KIM%20SCOM%207330%20Custom%20Audio.zip>  
*See the SCOM 7330's Owner's Manual for instructions on installing the CustomAudioLib.bin file.*

If you choose not to use the custom word, "Wires", you can substitute it with the word "Wide".

To view the my complete SCOM 7330 script,

- Download link: <http://www.wa8kim.com/files/WA8KIM's SCOM 7730 Controller Script.txt>



## Example Programming Script

```
; ===== GENERAL SETTINGS FOR WiRES-X (Radio Port 3) =====
MPW 31 0102 9915 57 0052 0367 05 * ; Sets Courtesy Tone for WiRES-X to C4 & C6
MPW 31 0300 * ; Delete Courtesy message from TX3-RX1
MPW 31 0301 * ; Delete Courtesy message from TX3-RX2
MPW 31 0302 * ; Delete Courtesy message from TX3-RX3
MPW 31 0202 * ; Delete Courtesy message from TX2-RX3
MPW 09 0300 0 * ; Set Courtesy Delay to zero TX3
MPW 09 0301 0 * ; Set Dropout Delay to zero TX3
MPW 09 0302 0 * ; Set Minimum Unkey Delay to zero TX3
MPW 57 13 2 * ; Sets RX1-TX3 Access Path Mode to CTCSS
MPW 57 23 1 * ; Sets RX2-TX3 Access Path Mode to COR
MPW 57 31 1 * ; Sets RX3-TX1 Access Path Mode to COR
MPW 57 32 1 * ; Sets RX3-TX2 Access Path Mode to COR
MPW 57 33 0 * ; Sets RX3-TX3 Access Path Mode to NO ACCESS
MPW 63 0303 1 * ; Enables End-of-Transmission Command Execution on Port 3
MPW 09 2306 0 * ; Set Transmitter #3 Identifier Message Interval to OFF

; ===== WiRES-X (SCOM 7330 Radio Port 3) Toggle On / Off =====
MPW 21 00A2 * ; Erase Macro
MPW 20 00A2 A103 * ; WiRES-X (Radio Port 3) Toggle On/Off (Initial Script)

MPW 21 A103 * ; Erase Macro
MPW 20 A103 A31 * ; Enable WiRES-X (SCOM 7330 Radio Port 3)
MPW 29 A103 MPW 21 00A2 * ; Erase the 00A2 Macro
MPW 29 A103 MPW 20 00A2 A104 * ; Create the 00A2 Macro to run A104 Macro

MPW 21 A104 * ; Erase Macro
MPW 20 A104 A30 * ; Disable WiRES-X (SCOM 7330 Radio Port 3)
MPW 29 A104 MPW 21 00A2 * ; Erase the 00A2 Macro
MPW 29 A104 MPW 20 00A2 A103 * ; Create the 00A2 Macro to run A103 Macro

; ===== WiRES-X (SCOM 7330 Radio Port 3) Enable / Disable Control Commands =====
MPW 21 0A30 * ; Erase Macro
MPW 21 0A36 * ; Erase Macro
MPW 20 0A30 MPW 15 9993 05 9961 3007 [x] [disabled] 9999 0A36 * ; Announcement
; MPW 20 0A30 MPW 15 9993 05 9961 [wide] [x] [disabled] 9999 0A36 * ; Announcement
MPW 20 0A36 MPW 63 0319 0 * ; Disable All Audio from WiRES-X (SCOM 7330 Radio Port 3)
MPW 29 0A36 MPW 63 0312 0 * ; Disable PTT

MPW 21 0A31 * ; Erase Macro
MPW 21 0A37 * ; Erase Macro
MPW 20 0A31 MPW 15 9993 05 9961 3007 [x] [enabled] 9999 0A37 * ; Announcement
; MPW 20 0A31 MPW 15 9993 05 9961 [wide] [x] [enabled] 9999 0A37 * ; Announcement
MPW 20 0A37 MPW 63 0319 1 * ; Enable All Audio from WiRES-X (SCOM 7330 Radio Port 3)
MPW 29 0A37 MPW 63 0312 1 * ; Enable PTT

MPW 21 0A32 * ; Erase Macro
MPW 21 0A38 * ; Erase Macro
MPW 20 0A32 MPW 15 9993 05 9961 [audio] [from] 3007 [x] [disabled] 9999 0A38 * ; Announcement
; MPW 20 0A32 MPW 15 9993 05 9961 [audio] [from] [wide] [x] [disabled] 9999 0A38 * ; Announcement
MPW 20 0A38 MPW 63 0319 0 * ; Disable Audio from WiRES-X to Repeater (SCOM 7330 Port 3)

MPW 21 0A33 * ; Erase Macro
MPW 21 0A39 * ; Erase Macro
MPW 20 0A33 MPW 15 9993 05 9961 [audio] [from] 3007 [x] [enabled] 9999 0A39 * ; Announcement
; MPW 20 0A33 MPW 15 9993 05 9961 [audio] [from] [wide] [x] [enabled] 9999 0A39 * ; Announcement
MPW 20 0A39 MPW 63 0319 1 * ; Enable Audio from WiRES-X to Repeater (SCOM 7330 Port 3)

MPW 21 0A34 * ; Erase Macro
MPW 21 0A40 * ; Erase Macro
MPW 20 0A34 MPW 15 9993 05 9961 [audio] [too] 3007 [x] [disabled] 9999 0A40 * ; Announcement
; MPW 20 0A34 MPW 15 9993 05 9961 [audio] [too] [wide] [x] [disabled] 9999 0A40 * ; Announcement
MPW 20 0A40 MPW 63 0312 0 * ; Disable Audio from Repeater to WiRES-X (SCOM 7330 Port 3)

MPW 21 0A35 * ; Erase Macro
MPW 21 0A41 * ; Erase Macro
MPW 20 0A35 MPW 15 9993 05 9961 [audio] [too] 3007 [x] [enabled] 9999 0A41 * ; Announcement
; MPW 20 0A35 MPW 15 9993 05 9961 [audio] [too] [wide] [x] [enabled] 9999 0A41 * ; Announcement
MPW 20 0A41 MPW 63 0312 1 * ; Enable Audio from Repeater to WiRES-X (SCOM 7330 Port 3)
```

## REVISION HISTORY

2016-02-16 Corrected HRI-200 10-pin connector numbering. Thanks to Jim K5JG for indentifying the issue.  
2015-08-31 MAJOR CORRECTION: Changed to SCOM 7330 Port 3. (I thought I had the HRI-200 on the SCOM 7330's port 2, but forgot I had switched it to port 3)  
2015-08-24 Added the Toggle On / Off Script section  
2015-08-23 Corrected an error in wiring diagram #1 (Moved brown wire trace from 7 to 8)  
2015-08-22 Created document