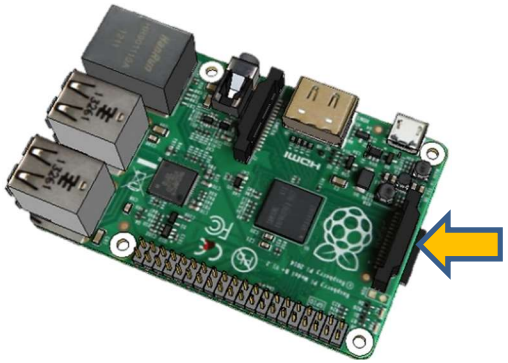
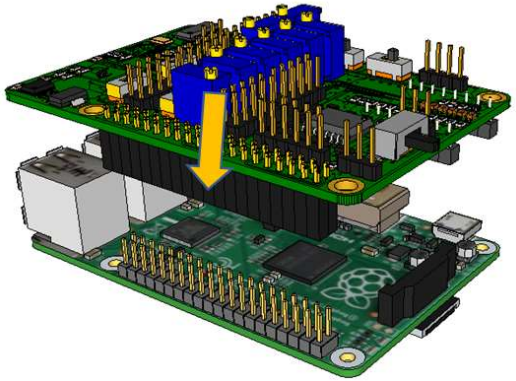
START HERE

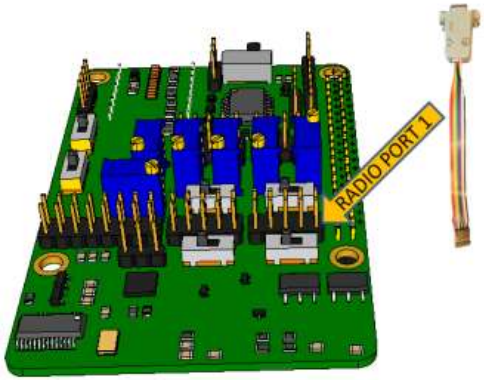
1 Install the microSD card with preloaded system image into the Raspberry Pi computer board.

2 Install the PI-REPEATER-2X onto the expansion header of the Raspberry Pi Computer board.

3 Install the DB9 ribbon cable for Port 1.





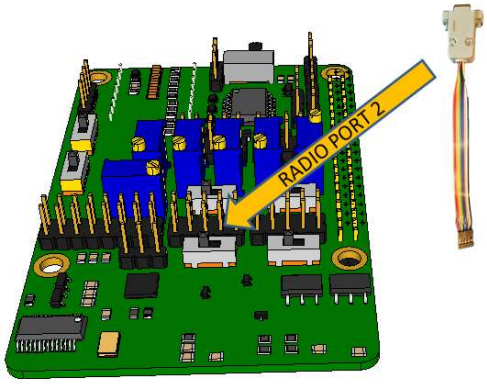


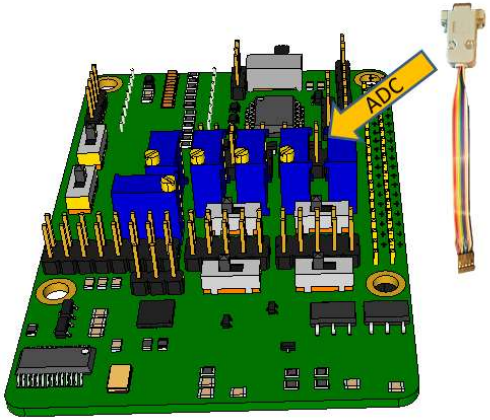
4 Install the DB9 ribbon cable for Port 2.

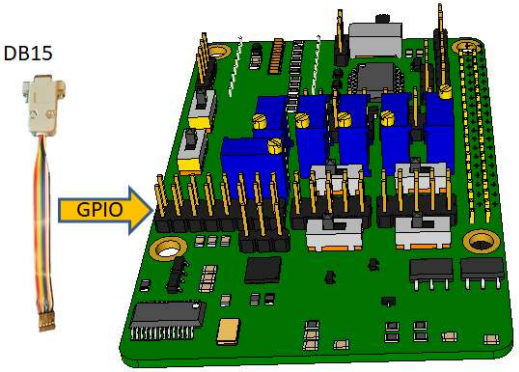
5 Install the DB9 ribbon cable for ADC.

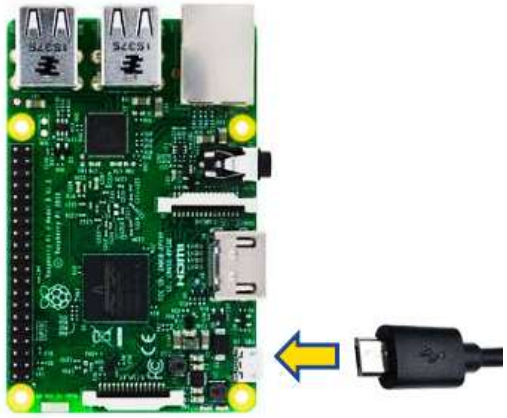
6 Install the DB15 ribbon cable for GPIO.

7 Apply power to Raspberry Pi Computer board.





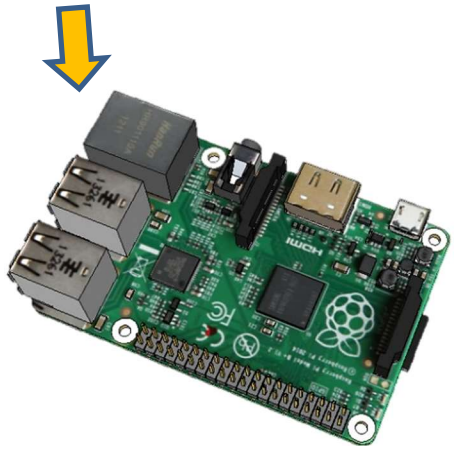




PAGE #2

8

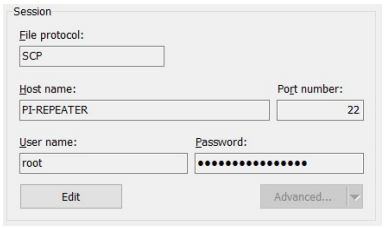
Install the Ethernet cable, wait for DHCP to assign an IP address.



9

Log into the Raspberry Pi using SCP terminal. We suggest using *WinSCP* if you don't already have an SCP application handy.

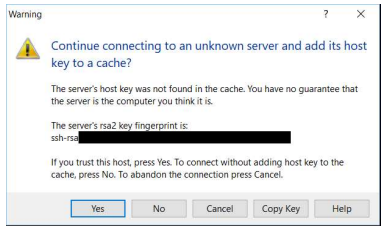
USER: root
PASSWORD: ICS-CTRL



10

At the unknown server warning, click **YES**.

This is an unknown device since it is the first time you have used this computer, this is expected.



11

On the right-hand pane, browse to /etc/svxlink/.

Open "svxlink.conf" for editing.

The default configuration is for 2 independent repeaters. This can be changed to a variety of configurations later.

In the file, update port 1 /2 CALLSIGN=MYCALL lines to reflect the correct callsigns. SAVE & CLOSE this file and WinSCP.

12

Connect your radios to the PI-REPEATER using the supplied DB9 ribbon cables that came with the board and were installed previously.

NOTE: you will need to build the cable specific to your radios, these can vary greatly and are not covered.

We suggest joining the Yahoo support group if you need assistance.

https://groups.yahoo.com/neo/groups/ICS-Controllers/info

13

Once you have your radio interface cable

Once you have your radio interface cable connected, Key up the receiver and send DTMF code "*" for approximately ½ second. This will force the system to ID.

While Keying, you should see 2 LEDS illuminate, and when you release the key, one should extinguish. If you do not see any LEDs, the COS input switch needs toggled to the alternate setting.

14

Adjusting the audio levels.

Adjusting the audio levels can be a bit of a process, and really you should have an oscilloscope for this process.

The input is best probed at Q1 and Q2, (near the DB15 cable input), 0-ohm resistors. These are after the adjustment stages. While injecting a sinewave, you should adjust the RIN/LIN ADJ and RGAIN/LGAIN pots to approximately 0.5Vpp ensuring no distortion.

ROUT/LOUT adjust volume output.

CONFIGURATION NOTES (Default Setup)

RX PORT 1 CONNECTOR PINOUT	TX PORT 1 CONNECTOR PINOUT
Write in your connections here for easy reference	

PORT 1

PIN	FUNCTION		SVXLINK CONFIG
1	CTCSS ENCODE	→	1 N/A
2	CTCSS INPUT	→	2 N/A
3	PUSH TO TALK	←	3 PTT_PIN=gpio506
4	AUDIO OUT	←	4 AUDIO_CHANNEL=1
5	AUDIO IN	→	5 AUDIO_CHANNEL=1
6	GROUND		6 N/A
7	COS INPUT	→	7 SQL_GPIO_PIN=gpio26
8	GROUND		8 N/A
9	GROUND		9 N/A
10	SHELL-GND		10 N/A

RX PORT 2 CONNECTOR PINOUT	TX PORT 2 CONNECTOR PINOUT
Write in your connections here for easy reference	

PORT 2

PIN	FUNCTION		SVXLINK CONFIG
1	CTCSS ENCODE	→	1 N/A
2	CTCSS INPUT	→	2 N/A
3	PUSH TO TALK	←	3 PTT_PIN=gpio507
4	AUDIO OUT	←	4 AUDIO_CHANNEL=0
5	AUDIO IN	→	5 AUDIO_CHANNEL=0
6	GROUND		6 N/A
7	COS INPUT	→	7 SQL_GPIO_PIN=gpio23
8	GROUND		8 N/A
9	GROUND		9 N/A
10	SHELL-GND		10 N/A

PORT 1

PIN	FUNCTION
1	CTCSS ENCODE
2	CTCSS INPUT
3	PUSH TO TALK
4	AUDIO OUT
5	AUDIO IN
6	GROUND
7	COS INPUT
8	GROUND
9	GROUND
10	SHELL-GND

PORT 2

PIN	FUNCTION
1	CTCSS ENCODE
2	CTCSS INPUT
3	PUSH TO TALK
4	AUDIO OUT
5	AUDIO IN
6	GROUND
7	COS INPUT
8	GROUND
9	GROUND
10	SHELL-GND

ADC

PIN	FUNCTION
1	AIN 0
2	AIN 1
3	AIN 2
4	AIN 3
5	AIN 4
6	AIN 5
7	AIN 6
8	AIN 7
9	GROUND
10	SHELL-GND

GPIO

PIN	FUNCTION
1	GPA0
2	GROUND
3	GPA1
4	GROUND
5	GPA2
6	GROUND
7	GPA3
8	GROUND
9	GPA4
10	GROUND
11	GPA5
12	GROUND
13	GPA6
14	GROUND
15	GPA7