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06-18-2012, 05:47 PM

#1



**John**  
Moderator

Join Date: Jan 2009  
Posts: 3,007

**Yamaha VSS-30 MIDI Retrofit Guide**

Step #0: Read the UMR2 user manual! You can download it from the [UMR2 product page](#).

Always remove batteries and disconnect any power supply from the host keyboard before wiring activity.

For some pictures of a VSS-30 installation using the older UMR product, see this thread:

<http://forum.highlyliquid.com/showthread.php?t=766>

**1. (VERY IMPORTANT) Connect Matrix Polarity Jumper**

Connect the UMR2 Matrix Polarity Jumper for the "Active Low" setting. You can do this by soldering a small piece of wire as shown.



## 2. Power and MIDI: Wiring and Test

Connect the UMR2 "DC IN" terminals and MIDI terminals as shown in the diagram. With the host keyboard powered on, test the MIDI signal path by making the following connections:

MIDI Controller MIDI Out -> UMR2 MIDI In

UMR2 MIDI Out -> Sound Module MIDI In

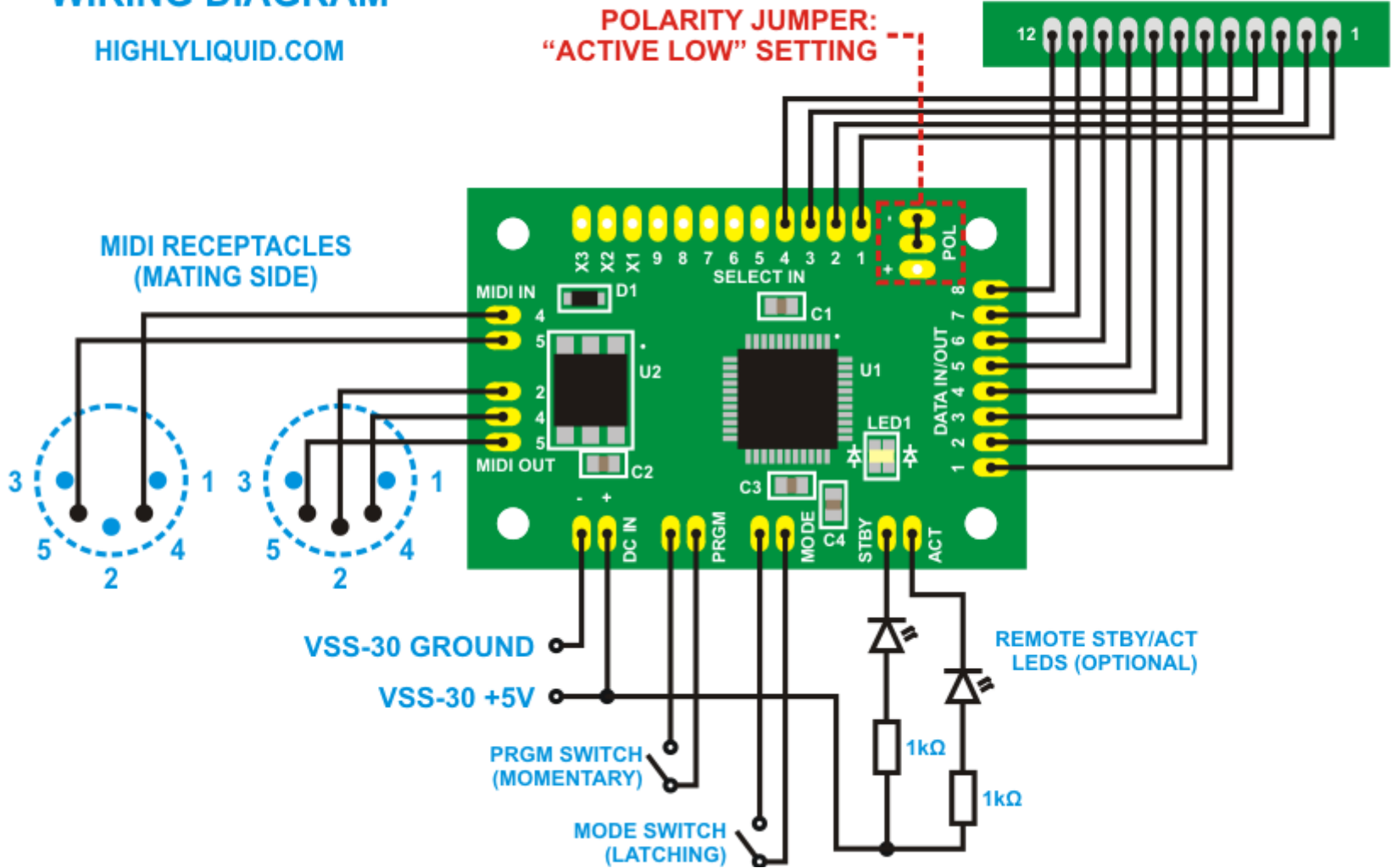
Test the UMR2 "software MIDI thru" by attempting to control the sound module with the MIDI controller. This confirms that the MIDI and power wiring are correct.

## 3. Matrix and Switch Wiring

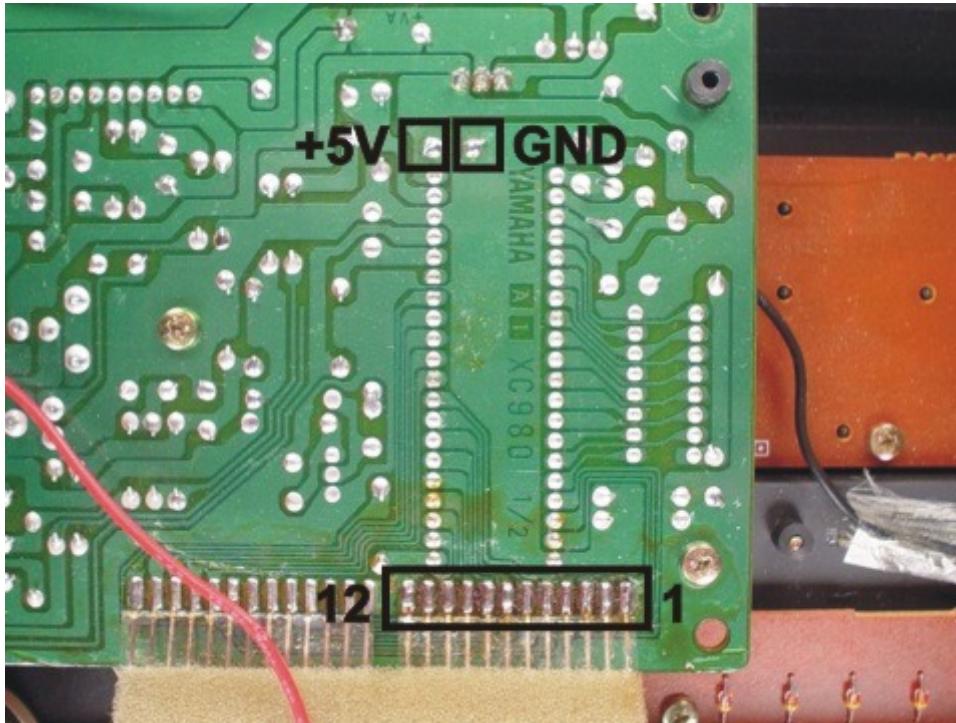
Complete the matrix wiring and PRGM and MODE switch wiring as shown in the diagram.

# UMR2 - YAMAHA VSS-30 WIRING DIAGRAM

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Host power and ribbon locations:



#### 4. UMR2 Setup Procedure

Complete the UMR2 Setup Procedure as described in the UMR2 user manual. This allows the UMR2 to "learn" the keyboard switch matrix configuration of the host, and also sets the MIDI channel and note range.

#### 5. Post Feedback

Post a reply to let us know how this worked for you. 😊

Last edited by John; 09-28-2013 at 04:09 PM.



06-19-2012, 12:43 AM

#2

[campbell](#)

Join Date: Oct 2009  
Posts: 33

Member



Thanks John!



06-26-2012, 04:42 AM

#3

[campbell](#)

Join Date: Oct 2009  
Posts: 33

Member

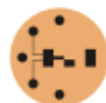


Just finished installing the UMR2 in my VSS-30 and it works perfectly!



06-26-2012, 06:54 PM

#4




[John](#)

Join Date: Jan 2009  
Posts: 3,007

Moderator




Quote:

Originally Posted by **campbell** 

*Just finished installing the UMR2 in my VSS-30 and it works perfectly!*

Thanks for the report! 😊 Any chance of seeing pictures or a video of the VSS-30 and UMR2? 😊



 07-23-2012, 07:49 AM

#5

[aldegra](#) 

Junior Member

Join Date: May 2011

Posts: 14




first of all thanks for the fun and enabling products and help.

i just got my SK5 working consistently with the umr2. it required a power switch for the umr2 itself. before i figured that out, i took the umr2 i was having trouble with out and put in a different umr2 fresh out of the package (i ordered two.) the setup procedure went seemingly well until i powered it back on and it never worked. so i put the other chip back in and then figured out the power switch solution with that one.

now i would like to install the umr2 that i setup but failed with SK5 into a yamaha VSS-30. i have all the wire connections made as in the diagram but the led's do the same that they did in the SK5 before i took it out. if i power on the umr2 with the program switch off, the red led blinks continuously. if i power on the umr2 with the program switch on, the red led stays lit. if i then switch the program off, the red led blinks continuously. if i turn it on with the program switch on and then send a midi note to it, the led blinks continuously (quicker).

what must i do to setup the umr2 with the VSS-30?



 07-25-2012, 07:14 AM

#6

**aldegra**  
Junior Member

Join Date: May 2011  
Posts: 14



Upon further testing, I've found that my vss-30 (the one im having trouble installing umr2) does not power on with any power supply but with batteries only. I have another vss-30 that does work with a Yamaha power supply that I have, so I know it's not the supply that is the problem.

I'm getting some gear looked at by some professionals here in Chicago, so I'll see if they might be able to fix this power problem with the vss-30.

Just to show that I'm actually using these things, here's a new mix of midi covers routed through my hardware <http://soundcloud.com/pastel-art-gallery/now> and here's an old video I made when I got my first umr about a year ago. <http://www.google.com/url?sa=t&rct=j...2vdPviMzYceEwg>

Once I get this to work in the vss-30, i will have 3 keyboards with functioning umr's and I will post some more glorious videos and sound clips of this retrofit world you have opened the door to for me!

*Last edited by aldegra; 07-25-2012 at 05:12 PM.*



08-27-2013, 12:43 AM

**jottum**  
Junior Member

Join Date: Aug 2013  
Posts: 4

**newbie vss-30/umr 2 installation questions**

Hi All!

going to start this project real soon. i have NO experience with anything like this...so here goes:

I'm planning to use the wires in a blue ethernet cable to make all the connections. Do I use it for both midi wiring and power wiring?

Do i do method A (direct) for the vss-30 power wiring?

What do i do for pgrm and mode? I don't know what these are...All I'm planning to do is Midi in for the vss-30. I also am not doing LED's so no worries about that.

For connecting the polarity jumper matrix i will do the "active low" setting, but what kind of wire do i use? the ethernet cabling or something else?

Finally what do I do with the two components with long wires that came with the UMR2?

thanks a ton 😊 i know this is a lot of questions! 😞



08-27-2013, 04:41 PM


#8



**John**  
Moderator

Join Date: Jan 2009  
Posts: 3,007

Quote:

Originally Posted by **jottum** 

*I'm planning to use the wires in a blue ethernet cable to make all the connections. Do I use it for both midi wiring and power wiring?*

Yes, that will work fine.



Quote:

Do i do method A (direct) for the vss-30 power wiring?

Yes.

Quote:

What do i do for pgrm and mode? I don't know what these are...All I'm planning to do is Midi in for the vss-30. I also am not doing LED's so no worries about that.

The PRGM switch is used during the "setup procedure" as described in the UMR2 user manual. You will need it to do the setup procedure, but you can remove it once things are working. (so it's not necessary to mount the switch on the host keyboard)

The MODE switch is described in the "operation" section of the user manual. If you are only using the VSS-30 as a sound module (not as a MIDI controller), then you can omit this switch.

Quote:

For connecting the polarity jumper matrix i will do the "active low" setting, but what kind of wire do i use? the ethernet cabling or something else?

A piece of wire from the ethernet cable will work fine.

Quote:

Finally what do I do with the two components with long wires that came with the UMR2?

These are not used in a VSS-30 installation.

Hope this helps. 😊



09-08-2013, 11:06 PM

#9

Join Date: Aug 2013  
Posts: 4

[jottum](#)  
Junior Member

**further questions**

getting close on this thing. still confused on the setup and mode details. since i'm not installing led's and only doing midi into the vss...how exactly do i do the setup (if it seems to be so reliant on led lights, etc)?

also trying to understand what midi controller vs sound module mode is...which one am i doing?

thanks so much for the help



09-20-2013, 06:43 PM

#10

Join Date: Aug 2013  
Posts: 4

[jottum](#)  
Junior Member

**bump**

bump...just following up on last post about needing some kind of switch to setup the umr2



09-28-2013, 04:07 PM

#11


Join Date: Jan 2009  
Posts: 3,007

 [John](#)  
Moderator



Hi Josh,

Quote:

Originally Posted by **jottum**   
*getting close on this thing. still confused on the setup and mode details. since i'm not installing led's and only doing midi into the vss...how exactly do i do the setup (if it seems to be so reliant on led lights, etc)?*

You may want to have the keyboard opened up for the setup procedure so that you can observe the LEDs as you complete the setup procedure. This can certainly be awkward if you have to keep the keyboard upside-down, for example. A lot of users mount remote LEDs (as shown in the hardware manual) so that they can observe the activity when the keyboard is sealed.

Quote:

also trying to understand what midi controller vs sound module mode is...which one am i doing?

MIDI controller: send MIDI output from the VSS-30 by pressing its keys.


Sound module: the VSS-30 makes sound when it receives MIDI input.

If you want some help visualizing an installation, check out this thread that has pictures of a VSS-30 retrofit installation:

<http://forum.highlyliquid.com/showthread.php?t=766>

It is written for the older UMR board, but the general idea applies equally to the UMR2.



 09-29-2013, 03:37 AM

#12

[jottum](#) 

Join Date: Aug 2013

Junior Member

Posts: 4


 **homestretch**

john thanks for the info.  
i'm at the setup procedure and all is well til step 5.  
the green light just keeps blinking as i play lowest note.  
just to be sure when it says "send a single midi note" in step 5 is that implying to send my vss-30 a midi signal from another keyboard?

just as reminder, i didn't install led's and i'm just using midi in option for the vss.

thanks!



 10-15-2013, 03:05 AM

#13

 **John**  
Moderator

Join Date: Jan 2009  
Posts: 3,007



Quote:

Originally Posted by **jottum**   
*john thanks for the info.  
i'm at the setup procedure and all is well til step 5.  
the green light just keeps blinking as i play lowest note.*

This suggests to me a MIDI wiring problem. It's very easy to get it reversed. I get it right about 50% of the time. 😊

Quote:

just to be sure when it says "send a single midi note" in step 5 is that implying to send my vss-30 a midi signal from another keyboard?

That is correct. You send just one note via MIDI from an external keyboard. After that, you press each key on the VSS-30, waiting for the UMR2 acknowledge each keypress.



08-22-2014, 06:25 PM

#14

[danlayne](#)  
Junior Member

Join Date: Aug 2014  
Posts: 3

#### Repeat Setup Procedure

I am able to drive the vss-30 from another keyboard, but am having troubles sending a signal from the vss-30.

I noted that the keys of the two keyboards are not aligned.  
Possibly I hit the wrong key initially when stepping through the setup procedure.

I have tried to re-initiate the set up procedure but have not got it to work.

Please explain how to repeat the setup procedure.

Thank you



08-25-2014, 03:49 PM

#15



**John**  
Moderator

Join Date: Jan 2009  
Posts: 3,007



Quote:

Originally Posted by **danlayne** 

*I am able to drive the vss-30 from another keyboard, but am having troubles sending a signal from the vss-30.*

*I noted that the keys of the two keyboards are not aligned.*

*Possibly I hit the wrong key initially when stepping through the setup procedure.*

*I have tried to re-initiate the set up procedure but have not got it to work.*

*Please explain how to repeat the setup procedure.*


*Thank you*

Hi Dan, welcome to the forum.

The setup procedure is described on page 9 of the user manual. It can be repeated as many times as necessary. Let me know which step you are having trouble with.

Also, for MIDI output, don't forget to use a mode switch to change between UMR2 "sound module" (MIDI input) and "midi controller" (MIDI output) modes.



 08-26-2014, 01:52 AM


#16

[danlayne](#) 

Junior Member

Join Date: Aug 2014

Posts: 3


 **Did I go to far?**

I read over page 9 and have done steps 1 through 8.  
The instructions state that steps 1-5 may be repeated multiple times.  
But if I also did steps 6-8 is the board permanently configured to those settings?

Or is there a way to re-initiate the programming stage?

When I was working through the instructions, I was also trying to figure out what was also wrong with my wiring set up, as one of the lights did not shine. I subsequently fixed that and also rewired the midi out plug which was initially incorrectly wired.

I did not totally comprehend step 5 and did not select the correct corresponding key.

 09-01-2014, 07:44 PM#**17**[DrStupid](#) 

Junior Member

Join Date: Aug 2014

Posts: 4

 **Stuck on step 5 too!**

Hi,

I'm having a similar problem to Jottum in that I have wired everything up and when I follow the setup instructions I can't seem to get the host keyboard to receive the single MIDI note. I am using a MIDI pad controller to send the note but it is showing up in the DAW as the right note and a MIDI signal. After reading the advice given to jottum, I double checked the wiring but it all seems fine (4 goes to 4, 5 goes to 5 etc.)

Any help would be greatly appreciated!

jottum - did you resolve your issue?  
john - any other suggestions as to why things may not be working?

I can take some photos if that would help.

Cheers,



09-09-2014, 07:24 PM

#18

**DrStupid**  
Junior Member

Join Date: Aug 2014  
Posts: 4

**Bump**

Any suggestions? Please?

I'd really like to get this up and going!

Cheers,



09-11-2014, 02:36 PM

#19

 **John**  
Moderator

Join Date: Jan 2009  
Posts: 3,007



Quote:



Originally Posted by **danlayne** 

*I read over page 9 and have done steps 1 through 8.*

*The instructions state that steps 1-5 may be repeated multiple times.*

*But if I also did steps 6-8 is the board permanently configured to those settings?*

*Or is there a way to re-initiate the programming stage?*

The entire procedure (steps 1 thru 8) can be repeated as many times as necessary.

If you had things working, but only wanted to change the MIDI channel or note numbers that the UMR2 responds to during normal operation, then you can repeat only steps 1 thru 5.


Quote:

When I was working through the instructions, I was also trying to figure out what was also wrong with my wiring set up, as one of the lights did not shine. I subsequently fixed that and also rewired the midi out plug which was initially incorrectly wired.

I did not totally comprehend step 5 and did not select the correct corresponding key.

For step 5, send a single MIDI note **to** the UMR2 **from** some other MIDI controller keyboard. The channel of this note sets the channel for the UMR2's MIDI input and output. The note number of this note will correspond to the lowest note on the UMR2's host keyboard.



 09-11-2014, 02:54 PM

#**20**



**John**  
Moderator

Join Date: Jan 2009  
Posts: 3,007



Hi DrStupid, welcome to the forum and sorry for the slow response.

Quote:

Originally Posted by **DrStupid** 

*Hi,*

*I'm having a similar problem to Jottum in that I have wired everything up and when I follow the setup instructions I can't seem to get the host keyboard to receive the single MIDI note. I am using a MIDI pad controller to send the note but it is showing up in the DAW as the right note and a MIDI signal. After reading the advice given to jottum, I double checked the wiring but it all seems fine (4 goes to 4, 5 goes to 5 etc.)*

Ok. For some reason, the MIDI note is not getting to the UMR2.

The best way to address this is to temporarily take a step back from the VSS-30 installation.

Get a known-working MIDI controller and sound module (or DAW) such that, with the following connection, sounds can be triggered:

known-working MIDI controller MIDI Out -> sound module MIDI In

Once it can be observed that the controller triggers the sound module, disconnect the two devices. Wire the UMR2 as follows:

- UMR2 "MODE" and "PRGM" switch terminals left unconnected
- known-working MIDI controller MIDI Out -> UMR2 MIDI In
- UMR2 MIDI Out -> (sound module) MIDI In
- connect 5V to UMR2 DC IN terminals

1. When 5V is connected to the UMR2, the red LED should light for a 1-second self test, and the green LED should remain lit. This indicates a correct power connection and a healthy UMR2 microcontroller.

2. Since the UMR2 has a software thru function during normal operation, any MIDI signal sent from the MIDI controller should trigger the sound module on the other end of the chain.

If the sound module can be triggered, then it is time to revisit the UMR2 setup procedure.

If the sound module can not be triggered, then there is either a MIDI wiring problem or a UMR2 malfunction (on rare occasions the optoisolator can be bad, blocking the incoming MIDI signal).

Please let me know what you find. If you are convinced that you have a bad UMR2, I'd be happy to send a replacement. However, it is worth noting that this is the least likely cause of the problem.



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UMR2 

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