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Casio SK-5 MIDI Retrofit Guide

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07-13-2012, 11:41 PM   #**1**

John ⦿
Moderator

Join Date: Jan 2009
Posts: 3,007

📄 **Casio SK-5 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 SK-5 before wiring activity.

1. (VERY IMPORTANT) Connect Matrix Polarity Jumper

Connect the UMR2 Matrix Polarity Jumper for the "Active High" 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.
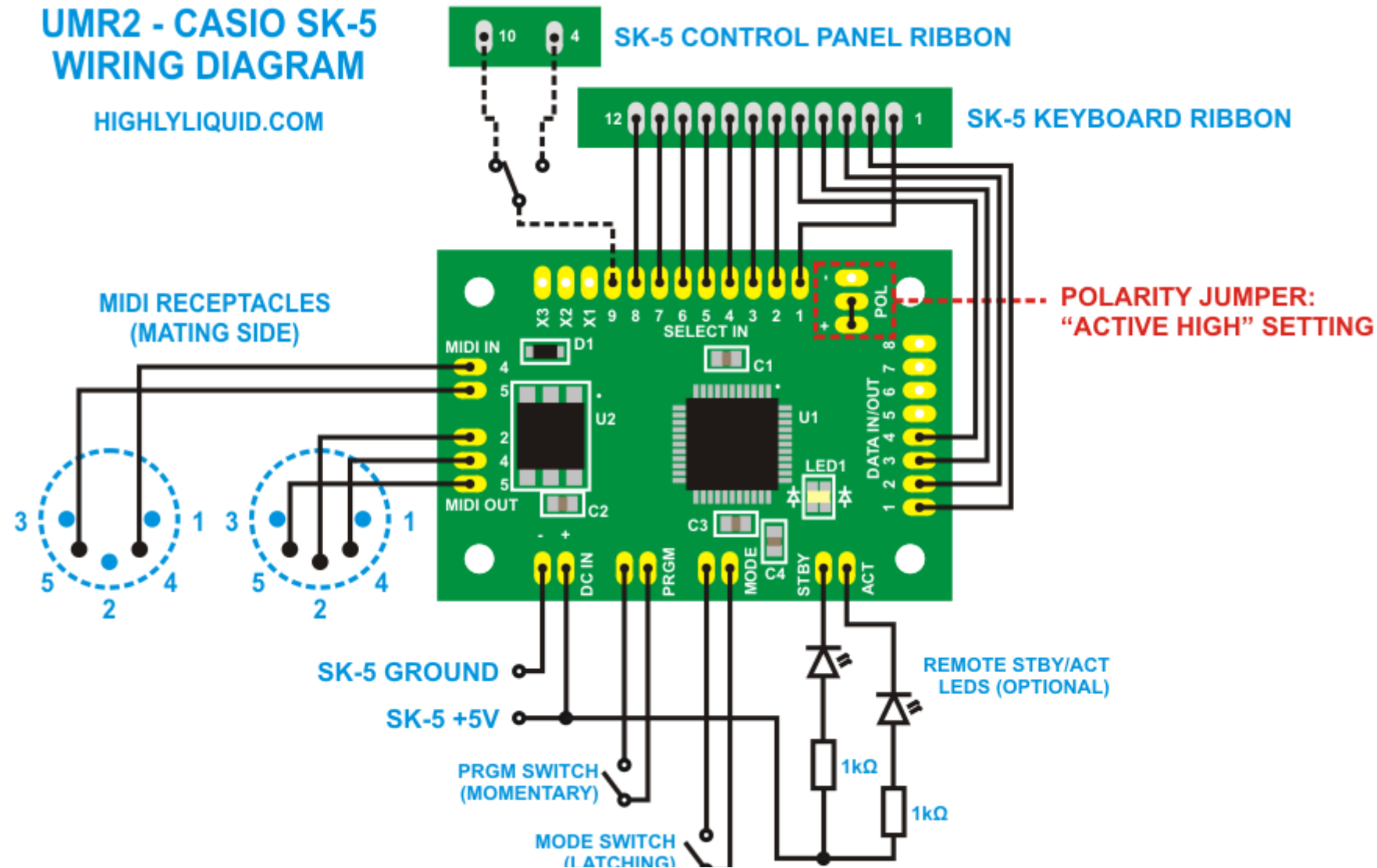
3. Matrix and Switch Wiring

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

The connection from UMR2 SELECT IN 9 to the SK-5 control panel ribbon is optional. This connection allows MIDI I/O for the sample or percussion pads.

UMR2 - CASIO SK-5 WIRING DIAGRAM

HIGHLYLIQUID.COM

SK-5 CONTROL PANEL RIBBON

SK-5 KEYBOARD RIBBON

POLARITY JUMPER: "ACTIVE HIGH" SETTING

MIDI RECEPTACLES (MATING SIDE)

SK-5 GROUND

SK-5 +5V

PRGM SWITCH (MOMENTARY)

MODE SWITCH (LATCHING)

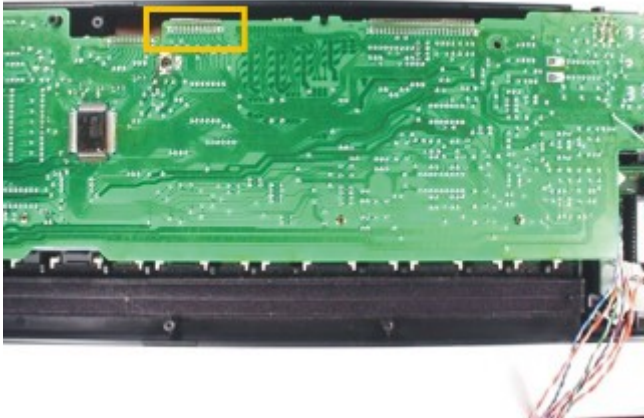REMOTE STBY/ACT LEDS (OPTIONAL)

1kΩ

1kΩ

Host ground and +5V locations:
Note: an alternate ground point has been suggested where the green wire is attached in the photo.

Host keyboard ribbon location:

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; 10-23-2013 at 02:41 AM.

Quote

07-17-2012, 04:23 AM
#**2**

JFEX ◯
Junior Member

Join Date: Jun 2012
Posts: 3

Cool, these instructions worked for my SK-5. Thanks, John!

Quote

07-18-2012, 07:22 PM   #**3**

aldegra ○   Join Date: May 2011
Junior Member   Posts: 14

What is the correct polarity setting? The close up diagram shows active high setting and the overall diagram has active low. I currently have it installed With the active high setting. I doubt this is the issue but...

I installed the umr2 one week ago and it worked as a sound module once with each of my two midi controllers (boss DR-5 and iPad). It worked with each of these once when I first connected them but not again after powering down the sk5 and powering it back up.

I just connected the sk5 and dr5 again after setting the project aside for a week. The sk5 responded as a sound module again but stopped after I powered it down and up again.

...so now I just tried it again after letting it rest for 15 minutes and it worked, but not again even after just powering down and up the DR-5.

Can you think of any explanation for why this arrangement only works after being left alone for a time?

Quote

07-19-2012, 03:35 AM   #**4**

John ○   Join Date: Jan 2009
Moderator   Posts: 3,007

Hi Aldegra,

> Quote:
>
> > Originally Posted by **aldegra** ⮞
> > *What is the correct polarity setting? The close up diagram shows active high setting and the overall diagram has active low. I currently have it installed With the active high setting. I doubt this is the issue but...*

Thanks for catching the error! 😊 I have updated the diagram to show the "active high" jumper setting.

> Quote:
>
> > I installed the umr2 one week ago and it worked as a sound module once with each of my two midi controllers (boss DR-5 and iPad). It worked with each of these once when I first connected them but not again after powering down the sk5 and powering it back up.
> >
> > I just connected the sk5 and dr5 again after setting the project aside for a week. The sk5 responded as a sound module again but stopped after I powered it down and up again.
> >
> > ...so now I just tried it again after letting it rest for 15 minutes and it worked, but not again even after just powering down and up the DR-5.
> >
> > Can you think of any explanation for why this arrangement only works after being left alone for a time?

I wonder if the problem has something to do with running status.

When you experience the problem, have you tried rebooting the sending device?

Or, in other words, always do these in order:

1. connect the two devices
2. power up the receiving device
3. power up the sending device

In general, if you reboot any receiving MIDI device in the middle of a data stream (even if during a pause in activity), you are likely to run into problems.

Let me know if this was helpful. Thank you for providing your feedback.

Quote

☐ 07-19-2012, 06:56 AM   #**5**

aldegra ○   Join Date: May 2011
Junior Member   Posts: 14

Thanks for your response, but it still doesn't work even if I don't turn the controlling device on until after the receiving device.

I've been doing a lot of taking the batteries in and out during all the trial and error because the only times that it works are when (after at least 15 minutes with the batteries out) I put in the batteries with the sk5 power switch already on. When I do this, all of the lights turn on at the same time and it works. If I put the batteries in without the sk5 power switch on, both the lights for the umr2 light up and stay lit until I turn on the sk5 power and then the red goes out and the green stays lit, but the notes don't sound when triggered by the sending device.

...Upon further testing, I've discovered that the green and red lights only stay on if the sending device is powered off or disconnected from the umr2. If my DR-5 is on and connected the umr2 when I put in the batteries for the sk5 (all this with sk5 power switch off) the lights turn on for a second then go out. If the DR-5 is off or disconnected when I put the batteries in, the lights stay on until I connect and power on the DR-5.

Does this mean it's a power issue? I think I'm going to get the power adaptor tomorrow and see if that helps.

Also, this particular keyboard of mine is a Realistic Concertmate 650, which I'm pretty sure is the same as the Casio sk5, ya?

Quote

☐ 07-20-2012, 08:36 PM   #**6**

labelwhore ⦿   Join Date: Mar 2012
Member   Posts: 42

Quote:

> Originally Posted by **aldegra** ▶
> *...Upon further testing, I've discovered that the green and red lights only stay on if the sending device is powered off or disconnected from the umr2. If my DR-5 is on and connected the umr2 when I put in the batteries for the sk5 (all this with sk5 power switch off) the lights turn on for a second then go out.*

I am having the exact same problem in addition the phantom notes I mentioned in the setup procedure trouble thread I started. Btw, mine is the Casio version, so I doubt yours being the Concertmate version has anything to do with it.

Quote

☐ 07-23-2012, 07:52 AM   #**7**

aldegra ⦿   Join Date: May 2011
Junior Member   Posts: 14

try putting a separate power switch for the umr2. my sk5 works with the umr2 now if i power the chip and the keyboard on and off in a certain order. let me know if you need the order or more details.

Quote

09-16-2012, 05:23 AM   #**8**

aldegra ○
Junior Member

Join Date: May 2011
Posts: 14

📄 **Reset?**

things were working well for a couple months there, but now im having problems again. when i turn on the umr2 with the program switch off, the red light blinks slowly. when i turn on the umr2 with program switch on, the red light stays on. then when i turn on the program switch, the red light blinks quickly. is there some way to hard reset the umr2 because i cant program it as is!

Quote

09-17-2012, 01:36 PM   #**9**

John ○
Moderator

Join Date: Jan 2009
Posts: 3,007

📄

Hi Aldegra,

Is there a reason you are using the program switch? Are you trying to repeat the setup procedure?

> Quote:
>
> Originally Posted by **aldegra** ▷
> *when i turn on the umr2 with the program switch off, the red light blinks slowly.*

Ok, the red ACT LED blinks for about 1 second at boot-up. This is a self-test and indicates normal operation.

Quote:

> when i turn on the umr2 with program switch on, the red light stays on.

This is expected. The light should remain "on" while the switch is held.

Quote:

> then when i turn on the program switch, the red light blinks quickly.

I'm not sure what you mean here. Are you releasing the PRGM switch?

Quote

☐ 09-17-2012, 08:55 PM   #**10**

aldegra ⦿   Join Date: May 2011
Junior Member   Posts: 14

🗎

im using the program switch in an attempt to repeat the setup procedure because the umr2 stopped functioning after about two months of use after a single successful setup procedure two months ago.

when the program switch is not held: the red light starts blinking when the umr2 is turned on and blinks continuously for as long as the umr2 is on. (it blinks at a slow rate)

when the program switch is held: the red light turns on when the umr2 is turned on and stays on (normal)

...then when the program switch is released: the red light blinks continuously for as long as the umr2 is on. (it blinks at a faster rate)

Quote

09-19-2012, 09:16 PM

#11

John ○
Moderator

Join Date: Jan 2009
Posts: 3,007

Quote:

> Originally Posted by **aldegra** ▶
>
> *im using the program switch in an attempt to repeat the setup procedure because the umr2 stopped functioning after about two months of use after a single successful setup procedure two months ago.*
>
> *when the program switch is not held: the red light starts blinking when the umr2 is turned on and blinks continuously for as long as the umr2 is on. (it blinks at a slow rate)*
>
> *when the program switch is held: the red light turns on when the umr2 is turned on and stays on (normal)*
>
> *...then when the program switch is released: the red light blinks continuously for as long as the umr2 is on. (it blinks at a faster rate)*

Hmmm. I'm having trouble figuring out why that would happen.

Are the results the same when the UMR2 MIDI In port is left unconnected?

Quote

11-21-2012, 03:51 PM

#12

labelwhore ○

Join Date: Mar 2012
Posts: 42

Member

Just checking back in to state that after putting this project down for a few months to work on some other things, I came back to it, and disassembled everything and started over. I must have had a short somewhere the first time around, because I followed the instructions again and now everything works perfectly.

Edit: It appears that a separate power switch is needed for the UMR2, because without one the UMR drains the batteries of the SK-5 when it's powered off.

Last edited by labelwhore; 11-26-2012 at 05:51 PM.

Quote

11-29-2012, 05:45 PM

#13

Ernani Cioffi
Junior Member

Join Date: Sep 2011
Posts: 10

Strange behavior

Hello John, how are you?

Do you believe that I only now got time to take care of UMR2? And I have problems ... I mounted the wiring, I check all, everything OK. I did the setup, LEDs on, LEDs off, fine. But when I turn on the SK5, nothing happens. Turn off, turn on, nothing. The SK5 don't play one note. In fact, the SK5 receive notes but do nothing, no sound. The led blinks, but no sound.
Then I noticed that the UMR2 needs "some activity" on the midi input to work. If I turn the SK5 and in same time I tap a few keys on the keyboard controller, the UMR2 starts to receive notes (and play) from the controller keyboard.

Other problem: as a controller, the SK5 is sending ghost notes on some keys.

I think I'll record a short video to demonstrate the two cases.

Some idea for now?

John, are you there?

Last edited by Ernani Cioffi; 12-05-2012 at 09:13 PM. Reason: John did not answer

Quote

12-06-2012, 04:42 PM

John ⭘
Moderator

#**14**

Join Date: Jan 2009
Posts: 3,007

Quote:

> Originally Posted by **Ernani Cioffi** ▶
> *Hello John, how are you?*
>
> *Do you believe that I only now got time to take care of UMR2? And I have problems ... I mounted the wiring, I check all, everything OK. I did the setup, LEDs on, LEDs off, fine. But when I turn on the SK5, nothing happens. Turn off, turn on, nothing. The SK5 don't play one note. In fact, the SK5 receive notes but do nothing, no sound. The led blinks, but no sound. Then I noticed that the UMR2 needs "some activity" on the midi input to work. If I turn the SK5 and in same time I tap a few keys on the keyboard controller, the UMR2 starts to receive notes (and play) from the controller keyboard.*
>
> *Other problem: as a controller, the SK5 is sending ghost notes on some keys.*

Hi Ernani, sorry for the delay.

For these types of situations, I have a sort of standard approach that I recommend. Basically, reduce the install to its simplest possible form, and then add complexity one piece at a time, testing after each step. This way, you can identify which parts of the install are causing trouble.

So, for example, you can disconnect all of the UMR2 select and data lines from the SK-5, except for just one of each. This will allow you to retrofit just one key. Perform the setup procedure, and test the functionality. If that works, then add another select or data line, and repeat the setup procedure, retrofitting the relevant keys.

Does that make sense? This can help you to identify if any of the connections are problematic.

It seems that a couple of other users have experienced trouble with the SK-5 install, but that the problems resolve themselves after a second attempt.

Another thing to check is always to make sure that the MIDI channel on the controller is matched to the UMR2. The UMR2 will give an activity indication even when it receives notes on the wrong channel. This is because the UMR2 is passing the note thru to the MIDI out port.

I hope this gives you some ideas to work with. Please let me know what kind of progress you are making.

Quote

02-25-2013, 08:33 PM   #15

John ○
Moderator

Join Date: Jan 2009
Posts: 3,007

Retrofitted SK-5 plays Super Mario Bros. theme:

http://www.youtube.com/watch?v=7gA7y3CNBQs

Quote

10-17-2013, 10:11 PM

#**16**

Ernani Cioffi ●

Junior Member

Join Date: Sep 2011
Posts: 10

Strange behavior with Casio SK-5

Hello, John, are you all right? I do not know if you remember but I bought a UMR2 in 2008 and so far I could not make it work satisfactorily.

So I'm sending a video, as they say, a picture speaks a thousand words.

http://www.youtube.com/watch?v=szywL...ature=youtu.be

As I say before, to work, the UMR2 need some activity while being turned on, as a glisado or something. After that it works perfectly.

All connections have been checked, everything is OK.

Any idea what it might be?

Tank you!

Ernani Cioffi

Quote

10-21-2013, 09:08 PM

#**17**

John ○
Moderator

Join Date: Jan 2009
Posts: 3,007

Here is something to try:

Power up your controller keyboard -after- powering up the SK-5/UMR2.

This is a typical issue with controllers that employ MIDI "running status". The upstream device should always be powered up after the downstream device.

Last edited by John; 10-23-2013 at 02:39 AM.

Quote

10-21-2013, 09:39 PM

#**18**

Ernani Cioffi ○
Junior Member

Join Date: Sep 2011
Posts: 10

Hello John, I actually found out the reason for the strange behavior of UMR2 in a SK5 (really a UMR2.)
The point you indicated as land in the installation instructions in SK5 is wrong. The point indicated is the normal ground, not the logic ground.
The logical ground is the point that has a green wire and marked GND.

This solves the problem of turn on the UMR2 but still the problem of ghost notes. When I play the first "C" and keep the note C, it repeat quickly with the first "D #"

Warning: this only happens in the SK5, I have one SK1 too and I tested in the SK1 and it worked perfectly.

If you want, I can make another video.

Ernani

Quote

10-23-2013, 02:47 AM

John ○
Moderator

#**19**

Join Date: Jan 2009
Posts: 3,007

Quote:

> Originally Posted by **Ernani Cioffi**
> *Hello John, I actually found out the reason for the strange behavior of UMR2 in a SK5 (really a UMR2.)*
> *The point you indicated as land in the installation instructions in SK5 is wrong. The point indicated is the normal ground, not the logic ground.*
> *The logical ground is the point that has a green wire and marked GND.*
>
> *This solves the problem of turn on the UMR2 but still the problem of ghost notes. When I play the first "C" and keep the note C, it repeat quickly with the first "D #"*
>
> *Warning: this only happens in the SK5, I have one SK1 too and I tested in the SK1 and it worked perfectly.*
>
> *If you want, I can make another video.*
>
>
> *Ernani*

Hi Ernani,

Thank your the information about using the different ground.

For the ghost note problem: does this happen with all notes, or only certain ones?

Quote

10-23-2013, 07:41 PM   #20

Ernani Cioffi ○   Join Date: Sep 2011
Junior Member   Posts: 10

The best way for explain:

http://www.youtube.com/watch?v=UvZGEjRaAQg

This only happens with SK5, with SK1 works fine.

Ernani

Quote

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