# Grp R24 Step Sequencer
Owner' Manual Supplement
Rev 1.1

Some parts of **Grp R24 Step Sequencer** require some careful procedures.

Row's control unit

It should be remembered some basic knowledge.

Each Row in **Grp R24 Step Sequencer** has its own control unit – on Row A, B and C. Every control unit allows to choose the behavior for the Row, indipendendtly on each Row. As you can imagine, to be operational, the control unit should be *activated*, otherwise it will not function.
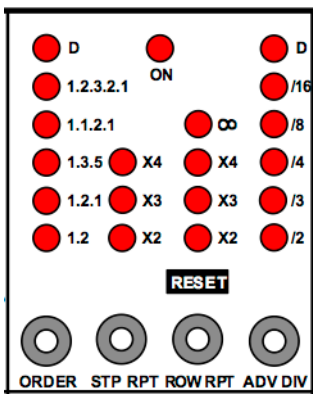
The main LED ON (at the top of the module) can be turned on or off:

- LED **turned on**: control unit manages controls for ORDER, STP RPT, ROW RPT, STP ADV; permits CV and Gate out on their respective ports, for working with external analog devices.
- LED **turned off**: control unit is inactive; Row's output CV and Gate are *disabled and inactive*.

When control unit on a Row is turned off, <u>there's not transmission</u> of CV and Gate from analog ports CV OUT and GATE 1 or 2 of that Row.

MIDI data transmission <u>is always active</u>, even when control unit is turned off.

Remote Control for SEQ MODE function

Remote control for function SEQ MODE works connecting a CV source to port SEQ MODE available in the CONTROL IN section of Connections; it permits to change the advance mode depending on CV value received (between 0 and +5 V). This control is easy to manage and verify: just seeing LEDs turning on depending on received CV value.
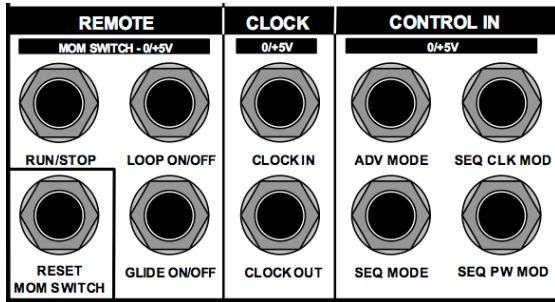
Sadly, it is possibile to make some confusion if you are using ROW C for CV generation connected at SEQ MODE input port: **R24** works correctly, but it can land on a potentially useless condition.

As long as CV from ROW C stays on a value corresponding to SEQ MODE A,B,C or A+B,C, everythihg is fine and controllable.

But when CV is strong enough to reach position SEQ MODE A+B+C, you'll shut off control unit on ROW B and C (logic enough: here you are working with just one sequencer, long 24 Steps, if you want…), disabling controls CV and Gate from dedicated outputs of ROWS B and C.
*With ROW C now disabled, **R24** is in the condition of not to be able to perform other variations: there's no more tension available to vary SEQ MODE. To fo back into a "normal" condition, youl should reset at minimum Step value on ROW C and you should disconnect the patch cable from SEQ MODE control input.*

Remote control on function ADV MODE

This one too can be potentially confusing but, in reality, is *correct and logic*. When you are driving ADV MODE function with a CV value from ROW C, you can land on a potentially useless condition.

Don't forget that remote control of function ADV MOD can browse one of six available advance modes for **R24** (FW, BW, FW/BW, PNDL, ALT, RND).

Since ALT mode turns off control unit for ROWS B and C, you can find yourself in the same possibile condition previously illustrated: once reached (under CV from ROW C) advance mode ALT, there's no more CV tension for go away and *you can't go back*, unless disconnecting patch cable from control port ADV MODE.

This problem only occurs when CV tension is generated by **R24** Step Sequencer itself. There's no problem when you are using *any other external CV source* for drive *any available advance mode* of the Sequencer.

We are currently evaluating several possibile solutions.

Internal and External Clock

First of all, it should be clear that Step Sequencer **Grp R24** works with an *internal Clock at 48 pulses per quarter.*
This density is needed for obtain correct ratcheting on everyt TIME DIVISION settings.

In the same way, with **R24**, External Clock too should be *dense* enough: you'll need a density of 24 or 48 ppq to obtain all ratcheting requested. The **R24** Sequencer can advance also with a lower external clock density (e.g., just one pulse per step), but – as you can imagine – you'll loose most of the ratcheting capabilities.

Here you'll find a table with all the available ratcheting X2, X3, X4 against different Clock and Time Division combinations.

T.DIV	INTERNAL CLOCK			MIDI CLOCK			TTL 1			TTL 24			TTL 48		
	X2	X3	X4	X2	X3	X4	X2	X3	X4	X2	X3	X4	X2	X3	X4
1	OK	OK	OK	OK	OK	OK	KO	KO	KO	OK	OK	OK	OK	OK	OK
2	OK	OK	OK	OK	OK	OK	KO	KO	KO	OK	OK	OK	OK	OK	OK
2t	OK	KO	OK	OK	KO	OK	KO	KO	KO	OK	KO	OK	OK	KO	OK
4	OK	OK	OK	OK	OK	OK	KO	KO	KO	OK	OK	OK	OK	OK	OK
4t	OK	KO	OK	OK	KO	OK	KO	KO	KO	OK	KO	OK	OK	KO	OK
8	OK	OK	OK	OK	OK	OK	KO	KO	KO	OK	OK	OK	OK	OK	OK
8t	OK	KO	OK	OK	KO	OK	KO	KO	KO	OK	KO	OK	OK	KO	OK
16	OK	OK	OK	OK	OK	KO	KO	KO	KO	OK	OK	KO	OK	OK	OK
16t	OK	KO	OK	OK	KO	OK	KO	KO	KO	OK	KO	OK	OK	KO	OK
32	OK	OK	KO	KO	OK	KO	KO	KO	KO	KO	OK	KO	OK	OK	KO