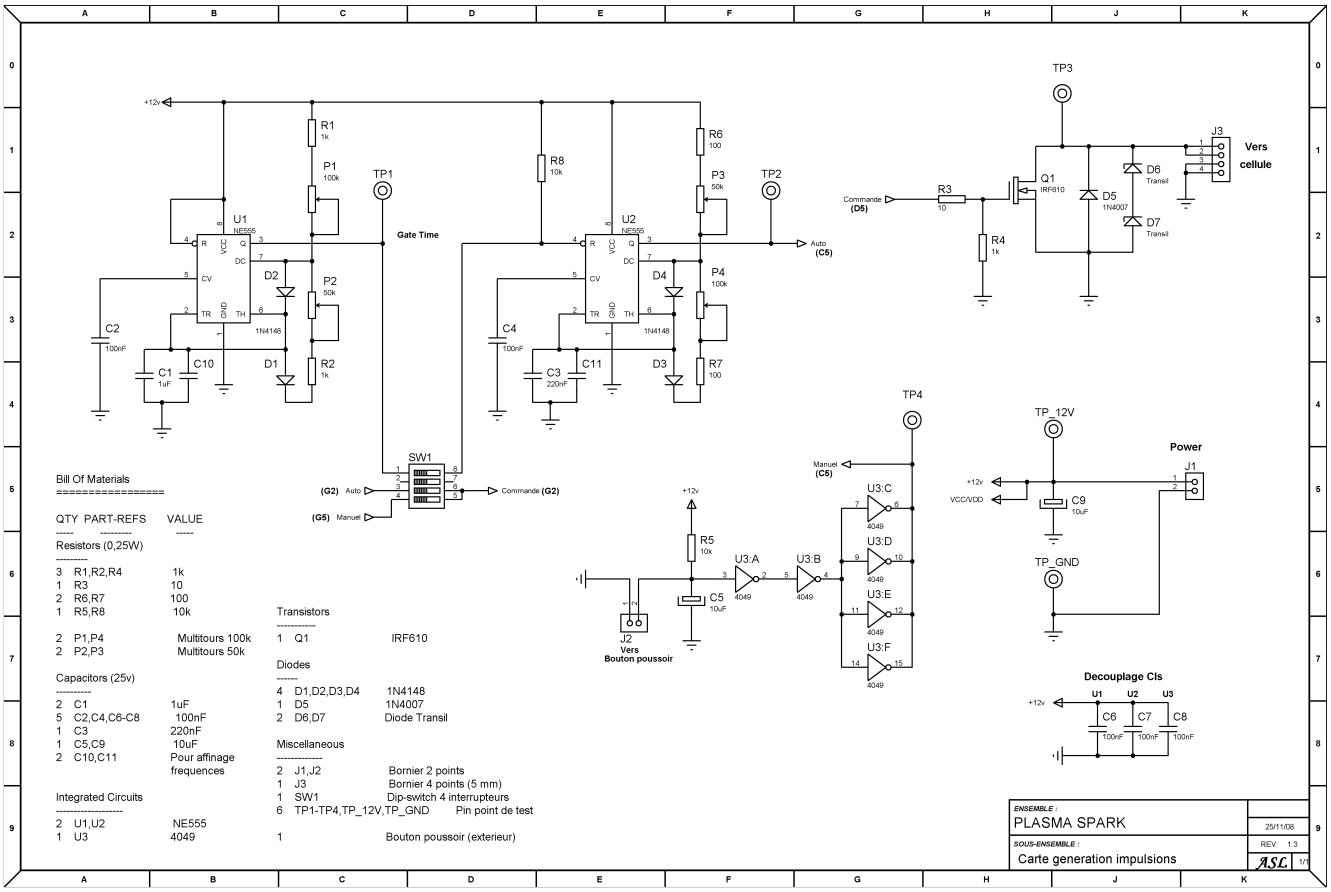
PWM CARD GH01 v1-3

USER MANUAL

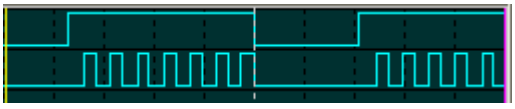
Translator : jeromero (Jérome)

Schematic :



U2 generates slots which will be available in the output (1 of J3).
U1 generates slots which will be used as a gate time, it means that when the gate time function is ON, U2 will come from the slots ONLY when the U1 slot will be on high level.

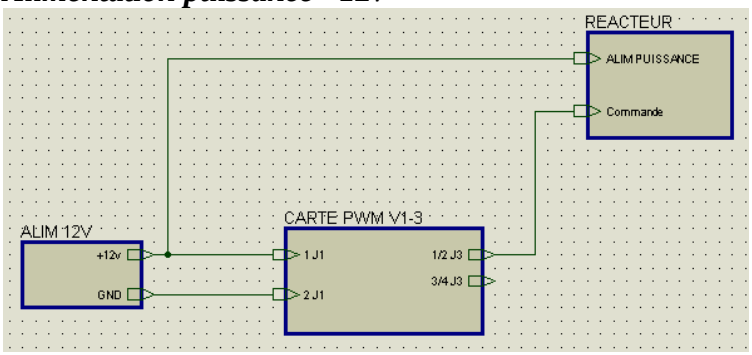
Example :



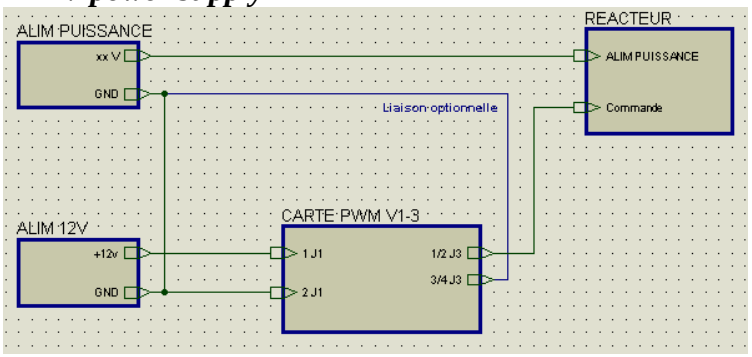
Top trace: output signal U1 (gate time)
Bottom trace: output signal U2. U2 can work only when U1 is on level 1 (12v).

Connections to system :

Alimentation puissance +12v

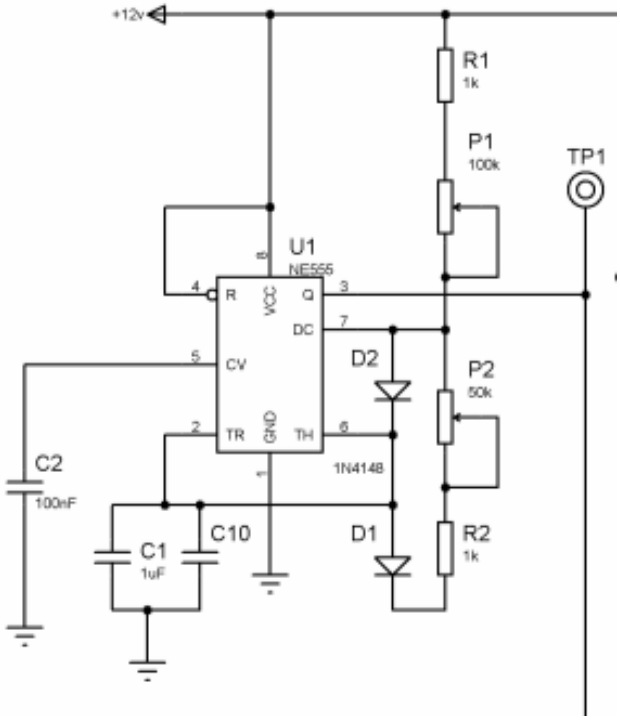


+12 V power supply



Slots time controls :

Each 555 is connected in the same way.



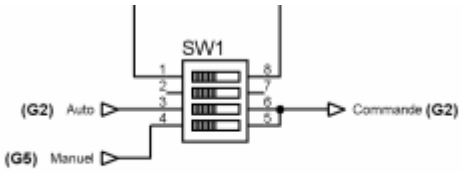
We take U1 as an example, but the U2 operation is similar.

Two potentiometers type trimmers (potentiometers multi-turn more accurate), P1 and P2.
P1 is used to set the duration of the slot high level.
P2 is used to set the duration of the slot low level.
The output is on pin 3.
Modifying a duration does not affect the duration on the other part of the slot (well, not too much).
Durations depend on the value of C1 and P1/P2 for each level.
A capacitor C10 has been added (C11 for U2), which may help to refine the frequency band desired.

WARNING :

With gate time, slots will always come at the beginning of gate time (normal).
Nevertheless for the end of the slot, synchronization between the gate time and the last slot has not been established
This means that the last slot may well be cut in half by the end of the signal gate time.
You should, in your settings, adjust the gate time (P1) in order to make "full" the last slot of the pulse train.

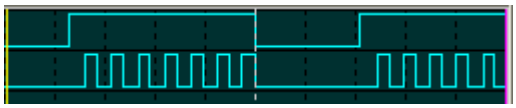
The switchs :



Switches shown here in OFF position

Switch 1-8

ON: Allows you to have a pulse train with gate time.



OFF (position shown on the diagram) without gate time, so continuous pulse train

Switch 3-6

ON: Sends the output of U2 (train with gate time or not, depending on the position 1-8) to mosfet.

Switch 4-5

ON: Sends the pulse generated by the switch to the mosfet. Therefore it allows to send a single pulse, determined manually.

WARNING : Both switches (3-6 and 4-5) should never be ON at the same time (short-circuit between output of U2 and U3).

Before you activate one, you must first switch OFF both

Diodes transil

They are only optional.
Only for a system where the amplitude of transition peaks could destroy the MOSFET (if using coil, transformer,...).

Mosfet

For Plasma Spark (project for which this card has been designed) a "little" mosfet was enough (200v / 3.5 A).
It is right that any other mosfet can be (N channel) as a function of the power you need

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Subject to mistakes or omissions…
On October 2, 2010
Asl