ROOT\G: - SCHEMATIC RULEBOOK

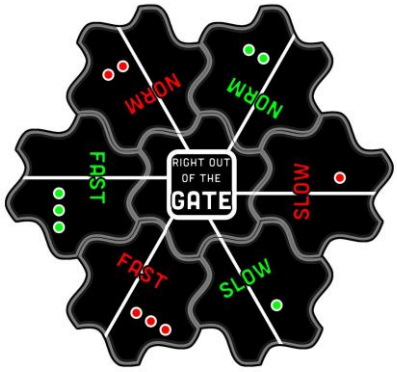
CONTENTS

- **52 circuit tiles**
- **9 terminal tiles**
- **1 core tile**
- **6 mission tiles**
- **1 R.O.O.T.\G: tile**
- **36 charge tokens**
- **9 signal tokens**

SETUP – 2 PLAYERS

- choose the game mode, in other words choose with which side of the circuit tiles to play with (black or green)

-Place the "core" tile in the center and the "terminal" tiles as shown the figure below:



Each player receives:

- 3 signal tokens (fast, norm and slow)

-18 charge tokens

- 2 mission tiles(1 and 0)

Each player reads in secret his or her objectives from the MISSION tiles:

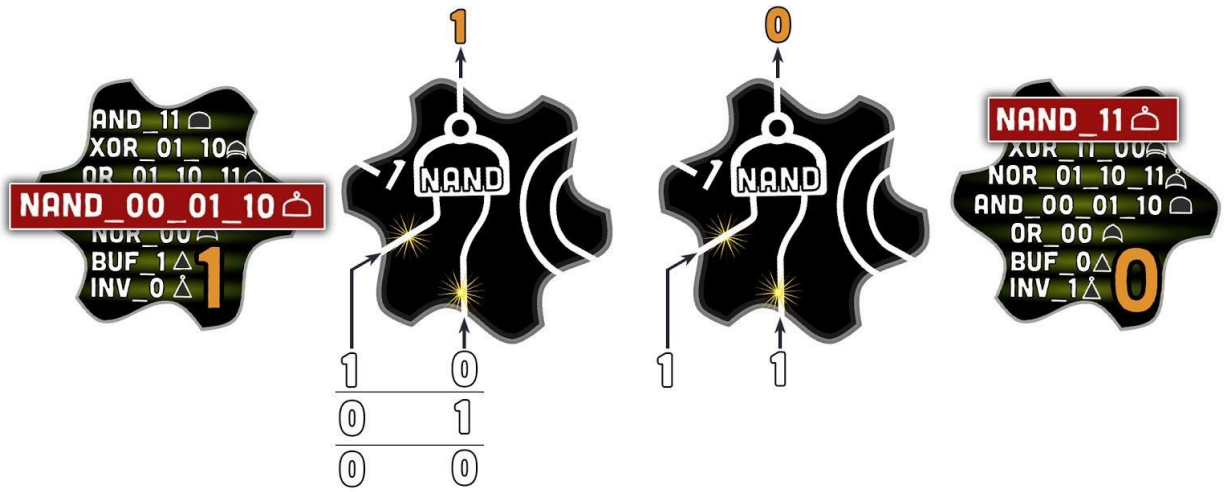
Missions can be read combining the two tiles. The back of the tile zero shows the three different terminals, Fast, Normal e Slow (3 dots, 2 dots, 1 dot), matched to letters; the back of the tile one shows each letter matched to an OBJECTIVE number.

Each player will try to bring to his or her terminal tiles the values following his or her objectives by using and combining the logic gates.

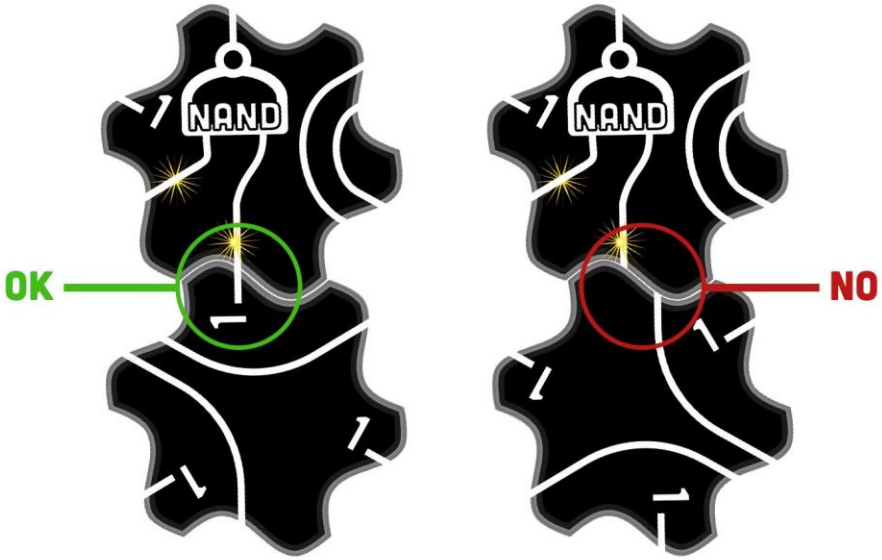
CIRCUIT TILES

There are 3 kind of circuit tiles: input tiles, link tiles and logic gate tiles.

- **Input tiles**
  They just contain logic values 0s and 1s
- **Link tiles**
  They contain linking wires and may contain input values
- **Logic gate tiles**
  They are the fundamental tiles of the game, they contain “Logic Gates” which transform signal combinations from inputs into output values, following the real electronic laws. You’ll find a brief summary on the back of the MISSION tiles. They may also contain links and inputs.



Tiles can be freely combined, their characteristic design prevent forbidden placements.



BEGINNING OF THE GAME

Each player draws a circuit tile and sums the numbers on the black side. Whoever scores higher starts the game by receiving the R.O.O.T.\G: tile. In case of a tie, the operation is repeated.

GAME PHASES

The Game is divided into two phases: charge and discharge. **Charge phase** comes first and lasts until a player gets rid of his or her last charge token.

CHARGE PHASE

The FASTEST player draws two hidden CIRCUIT tiles, chooses one to keep and give the other to the opponent.

Who's the fastest player?

- In the first turn the fastest one is who's without the R.O.O.T.\G: tile.
- In the following turns the fastest one is who reaches his or her fast terminal passing through less logic gates, (if they tie norm terminals are compared and then slow terminals. If tie persists the fastest one is still who's without the R.O.O.T.\G: tile.)

Once circuit tiles have been distributed, placement follows. (see the **placing rules** paragraph).

Whoever has the R.O.O.T.\G: tile is the first one to place. He or she may also decide to give away to the opponent the R.O.O.T.\G: tile and let him or her place first.

After that the remaining player places.

Each player gets rid of charge tokens, depending on the speed of his or hers terminals that have been linked to a new logic gate during this turn.

Fast ❼ 3 tokens

Norm ❼ 2 tokens

Slow ❼ 1 token

Placement of input and link tiles does not allow to get rid of tokens.

NOTE:

- if a logic gate is linked to more than one terminal each one allows their owners to get rid of tokens
- also links made by the opponent may allow you to get rid of tokens

After the token dropping the new fastest player is declared.

When a player gets rid of the last token he or she goes into **discharging phase**.

PLACING RULES

- each tile must always touch another tile.
- links and logic gates can be placed in your own circuits or terminals or in the ones of your opponent
- inputs can be always placed on your own circuit but you can place them on your opponent's one only when you are in the discharging phase.

DISCHARGING PHASE

A player in discharging phase goes on playing as before but he or she may ask to turn on the circuit, ending the match.

In this case, if the opponent does not agree, the discharging player becomes the fastest and gains the R.O.O.T.\G: tile; if he or she already has it, the opponent takes one charge token (and back to the charging phase!).

END OF THE GAME

The game ends when the circuit is turned on: this may happen for different reasons:

- a discharging player proposes it and the other accepts
- the last CIRCUIT tile is placed
- all circuits have been closed with inputs and no further links are realizable.

TURNING CIRCUIT ON

If a player still has tokens then one third of them must be given to the opponent and get rid of the others.

Players place corresponding SIGNAL tokens (FAST, NORM, SLOW) in the most distant points of the circuit from their TERMINALS, that is the end of the path that passes throught more LOGIC GATES.

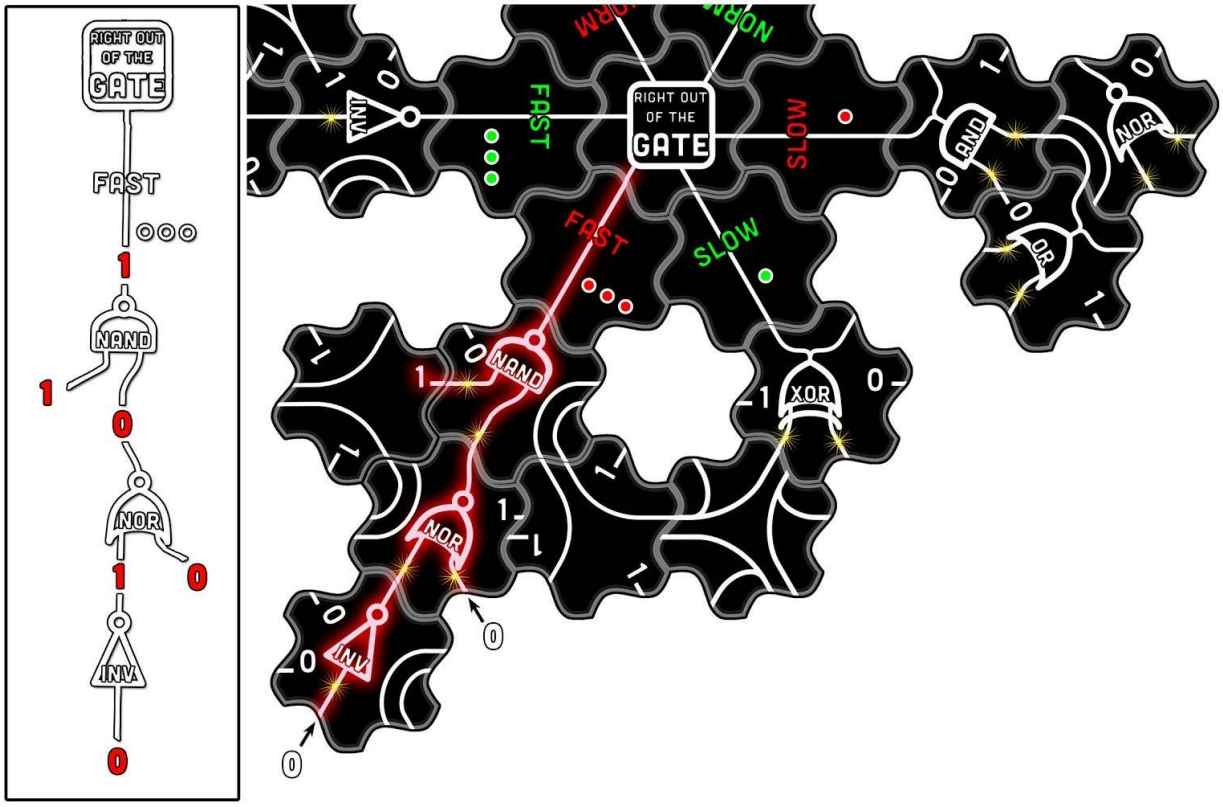
Players move each SIGNAL token through the following LOGIC GATE in the circuit.

Every time a signal passes through a logic gate players put on their 0 MISSION tile a CHARGE token, dividing them in piles for FAST, NORM and SLOW.

Every time a SIGNAL token overcomes the last logic gate and reaches a terminal (FAST, NORM o SLOW), it is trasmitted to the CORE and processed.

SIGNAL PROCESSING

When a signal reached the CORE its logic value is calculated applying to input values the effect of the LOGIC GATES that have been encountered on the path. If there is no input entering a logic gate it is considered as linked to a 0.



If the SIGNAL value corresponds to the MISSION objective player receives a corresponding pile of CHARGE tokens as points.

If the SIGNAL is wrong, a corresponding number of charge tokens are put on the CORE and will go to the next player who correclty processes a signal.

If two or more signals are correctly processed simultaneously by the two players, whoever correctly processes the majority of signals will gain the residual tokens on the CORE. The residual tokens will be divided in the case of a tie (discarding one token in case of odd numbers).

Each time a signal is processed all the token piles (on the 0 MISSION tile) are cleared; only already acquired points remain.

Once all SIGNALS are PROCESSED the game ends.

The player with more CHARGE tokens wins.

If the players tie, the player with the R.O.O.T.\G: tile wins.

COMING SOON: “CHILD MODE” rules (to teach kids the basics of electronics) and rules for more than 2 players.