Rubik 2x2x3 Tower Cube

a.k.a. Slim Tower, Franken Tower
Made by Gentosha, Japan, 2009.
(plastic, 1.5 x 1.5 x 2.25 inches,
opposite red is yellow, opposite blue is light green, and opposite gray is black)

An extended Rubik's 2x2x2 where two dimensions are restricted to 180 degree rotations.

Notation: With a 2x3 surface facing you, F (front), B (back), U (up), and D (down) denote 180 degree clockwise rotations of the corresponding faces, L (left) and R (right) denote a 90 degree clockwise rotation of the corresponding faces, - to rotate counterclockwise instead of clockwise, 2 or 3 to do it two or three times.

Solution: The solution that comes with the puzzle gives the following transformations that may be used to solve the corners and edges independently; Jaap's Page presents additional transformations that can be used for faster solving.

Solve the corners using the following transformation as needed:

BRU <-> BRD: \[ U \ F \ R \ F \ \ L^{-} \ U \ L \ \ U \ \ R^{-} \ U \ R \]

Solve the edges using the following transformation as needed:

UF <-> UB: \[ (U \ R^2)^3 \]

Further Reading
Jaap's Page, from: http://www.jaapsch.net/puzzles/cube223.htm
(Presents a similar approach with many additional transformations.)