

# High-Resolution Beam Switch AntennaBased on Modified CRLH Butler Matrix

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## Abstract

A Novel beam switch antenna based on a CRLH Butler matrix is presented in this manuscript. The CRLH transmission line is proposed to increase the number of beams switch. The proposed CRLH TL has more than 100- degree phase deference with different bias voltages. By different bias voltages between 0 to 8 Volt, different combinations of phase shifts are achieved. The CRLH transmission line is added to the conventional butler matrix to increase the number of phase incremental combination and consequently the beam pattern. A 5-degree beam resolution is achieved. The measurement results follow well with the simulation result.

## Hosted file

CRLH Butler Matrix\_ver\_Final.pdf available at <https://authorea.com/users/296703/articles/425711-high-resolution-beam-switch-antennabased-on-modified-crlh-butler-matrix>