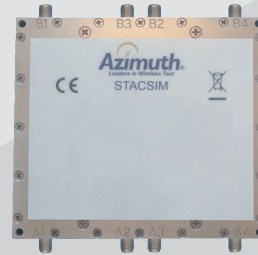


4x4 Butler Matrix (cross-path and fixed-phase shift) for Static MIMO Propagation Environment

STACSIM-(Static Channel Simulator) ACC-290

STACSIM-WB-(Static Channel Simulator) ACC-339



For Comprehensive Testing of Wi-Fi, LTE Unlicensed, 5G, and Other Wideband MIMO Applications

Full-scale adoption of multiple input/multiple output (MIMO) and wider bandwidths is a common theme in the evolution of cellular and Wi-Fi technologies. Regardless of the end application, testing these wideband wireless technologies requires controllable, wideband connectivity with the right phase-amplitude characteristics.

Azimuth’s Static Channel Simulator (STACSIM) provides cross-path and fixed-phase shifts on a 4x4 matrix based on the commonly used Butler array, in which a signal incident at each input port provides equal amplitude signals at the N output ports.

Azimuth’s STACSIM provides:

- A wideband flat channel over a wide frequency range
- A 4x4 connection with Butler phase-amplitude characteristics
- A high-rank matrix with a low condition number
- Exceptional isolation

The STACSIM is available in two variants: the standard STACSIM focuses on Wi-Fi frequencies; the STACSIM-WB (wideband) supports a wider frequency range, making it ideal for Wi-Fi, LTE unlicensed, Bluetooth, and more.



Specifications

Frequency	ACC-290 2.4 GHz to 2.5 GHz and 4.9 GHz to 5.9 GHz ACC-339 700 MHz to 6 GHz
Topology	Up to 4x4 (full rank)
Isolation	At least 20 dB

Butler Matrix Phase Characteristics					
ACC-290/ACC-339		Output Port			
		B1	B2	B3	B4
Input Port	A1	-45	-90	-135	-180
	A2	-135	0	135	270
	A3	270	135	0	-135
	A4	-180	-135	-90	-45