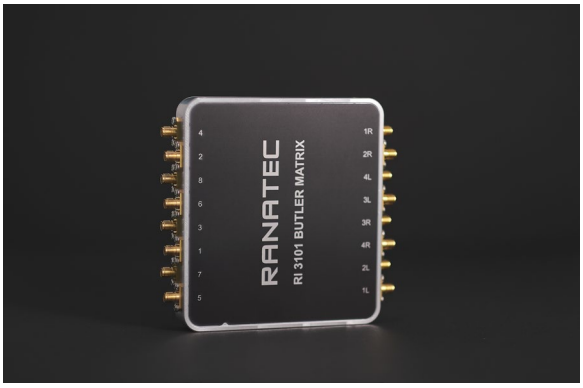
DATA SHEET

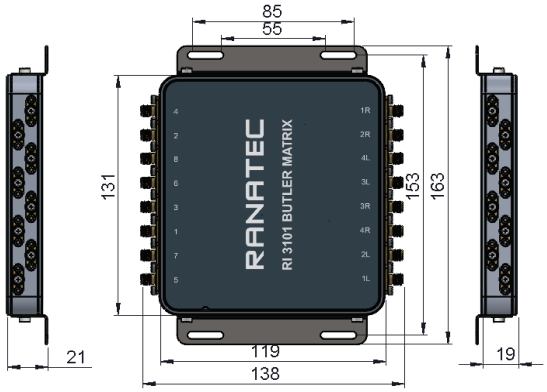
RI 3101
BUTLER MATRIX

8x8 Butler Matrix
2.4 to 8 GHz



OVERVIEW
The RI 3101 Butler Matrix is a beamforming network that controls the directions of a beam, or beams, of a radio transmission. The beam direction is controlled by switching power to the desired beam port. In transmit mode it delivers the full power of the transmitter to the beam, and in receive mode it collects the signal from each of the beam directions with the full gain of the antenna array.

APPLICATION
The Ranatec Butler Matrix supports multichannel MIMO testing for up to 8+8 antenna ports, over a large frequency range. It covers all present Bluetooth and WIFI bands from 2.4 to 7.125 GHz. The Ranatec Butler Matrix can also be used for antenna array beamforming and interface testing for multiple systems in the frequency range, and for multichannel multipath emulation.



Mechanical Outline Drawing (mm)

FEATURES
- Good Output Phase Accuracy
- Large operating bandwidth
- Compact design

SPECIFICATION

Frequency range	2.4–8 GHz
Return loss (50 Ohm reference)	13 dB typical[1]
Output phase deviation from nominal	<±10° typical
Output amplitude deviation from nominal	<±3 dB[2]
Insertion Loss	<13 dB[3]
Isolation	>13 dB[4]
Maximum power	5 W[5]
Dimensions (WxLxT)	138x131x19 mm
Mass	0.78 kg
Connector type	SMA-F

[1] VSWR = 1.6
[2] Nominal is equal amplitude in the 8 output ports
[3] 9 dB of total 13 dB is splitting loss (1:8)
[4] Measured as isolation between input ports
[5] Total input power (average)

ORDERING

RI 3101	Butler Matrix
RI 3101-16	Mounting Brackets